DOCUMENT RESUME

ED 200 190 IR 009 204

AUTHOR Goldin, Laurence A.; Bear, Becky
TITLE Comparisons of Selected Instructional Television Networks: Programming, Management, and Funding Models.
SPONS AGENCY Alaska State Dept. of Education, Juneau. Office of Planning and Research.
PUB DATE Jun 79
NOTE 251p.

EDRS PRICE MF01/PC11 Plus Postage.
DESCRIPTORS Adult Basic Education; Broadcast Television; Communications; *Comparative Analysis; Cost Effectiveness; *Educational Television; Elementary Secondary Education; Foreign Countries; *Models; Networks; Postsecondary Education; Programing (Broadcast); Telecommunications; *Use Studies
IDENTIFIERS Canada; United States

ABSTRACT

Aspects of 11 instructional television (ITV) networks in the United States and Canada were compared to illustrate areas of practical interest to Alaskan educators and policy makers. Areas examined included: (1) the use of broadcasting to deliver K-12 programming; (2) post-secondary academic courseware, adult basic education, and continuing professional training; (3) examples of networking based on program service through locally-licensed stations; and (4) the use of telecommunications services other than broadcast television to complement or provide services integral to specific aspects of broadcast television. Programming services provided by various agencies or distribution networks were studied, and attention was focused on questions of centralized services, cost economies or derived benefits, and the methods and advantages of local or user control offered by decentralized systems or networks. (MER)

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COMPARISONS OF SELECTED INSTRUCTIONAL TELEVISION NETWORKS:

Programming, Management and Funding Models

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JUNE 1979

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IR009204

This study was initiated by the Instructional Television project of the Alaska Department of Education, Office of Planning & Research, in the fall of 1978. Additional funding and support has been provided by the:

Alaska Department of Education
Office of Planning & Research
Educational Program Support, K-12 Unit
Public Information Office

University of Alaska-Anchorage
Media Services Department

Office of the Governor
Office of Telecommunications

Alaska Public Broadcasting Commission

The opinions expressed in this report are those of the contractor, Laurence A. Goldin, and associate Becky Bear, and do not necessarily reflect the opinions of the individual funding agencies or of the State of Alaska.

Duplication of these materials for educational purposes is permissable, with acknowledgment to the authors, and to the Alaska Department of Education.

JUNE 1979

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ACKNOWLEDGMENTS

Thanks are due the numerous educational and broadcasting professionals of the networks profiled for their assistance in providing information, insight, and materials for this report. Many offered generously of their time, patience, and experience, provided further contacts, and helped track down specific or detailed information. Too numerous to credit here, those who provided assistance are credited in the bibliography of each network profile.

Thanks to the Alaska Department of Education, and its Office of Planning and Research for its interest in exploring the potential of instructional television for Alaska, especially Dr. Ernest Polley, who as Coordinator of Planning and Research has provided an atmosphere receptive to innovation in the broad field of educational telecommunications. Thanks also to Office of Planning and Research Secretary Esther Stevenson, for proof-reading and typing portions of this report.

Special thanks are due to the Department of Education's Instructional Television Coordinator Jennifer Wilke, who conceived of and arranged for this project, and who provided continual support, direction, and editorial assistance throughout the project. Thank you, Jennifer, for your invaluable assistance in organizing and integrating the information here contained.

METHODOLOGIES AND LIMITATIONS OF THIS STUDY
by Laurence A. Goldin

Selection of the instructional television systems profiled in-depth for this comparative study were based on the criteria established by the four funding institutions: the Department of Education, the Alaska Public Broadcasting Commission, the University of Alaska-Anchorage, and the Governor's Office of Telecommunications.

The principle criteria were that this study provide a detailed look at the use of broadcasting to deliver K-12 programming (DOE); post-secondary academic coursework, as well as adult basic education and continuing and professional training (UAA); that systems studied provide examples of networking based on program service through locally-licensed stations (APBC); and that attention be given to telecommunications services other than broadcast television when used to complement or provide service integral to specific aspects of broadcast television (GOT). The fundors further established that this study would emphasize the programming and services provided by various agencies or distribution networks, and not the hardware or technical specifications of these systems.

While the emphasis in this initial report is clearly the variety of methods used to broadcast instructional television, other telecommunications services are mentioned as appropriate in the individual system profiles; suggestions for related educational (non-television) telecommunications services deserving further study by the State of Alaska are included in the recommendations provided with this report.

Given the above initial criteria by the funding agencies, considerable attention throughout this research has focused on the questions of centralized services and the cost economies or other benefits derived, and on the methods and advantages, principally local or user control, offered by decentralized systems or networks. A summary of the attributes of each system selected for study is found in the Network Comparison Table in this report.

Information was gathered through two primary methods once selection of model systems had been made to meet the study's criteria: correspondence and telephone interviews. Every effort was made to contact those in top management positions of all participating agencies within each selected ITV system, as well as those with direct utilization responsibilities, or longevity with their respective systems. The obvious drawbacks to this methodology (imposed by limited time and funding) include the lack of travel or opportunity to "look" at actual systems management, and the possibility that important personal contacts may not have been made, and the resulting insights not contained in this report.

I am confident that, given these restrictions, the information thus gathered provides a substantial and adequate basis for the comparative summaries and system generalizations in this report. A dilemma not infrequently encountered, however, was the variety of perceptions about different elements of each system reported by those working in different agencies or divisions of the same system. Every effort was made to resolve any such differences through additional contacts, and the inevitable conclusions from this experience are certainly not uncommon within institutional or bureaucratic systems: many formal assignments or responsibilities may not be supported by informal relationships, or conducted in fact as described in available system or agency literature. In some cases, this discrepancy may be completely inconsequential and the result of individual personalities or interests; in other cases it may certainly result in differing emphasis or accomplishment than here reported.

A related difficulty was the scarcity of objective information: many of the various state or other agencies active in the delivery of ITV had readily available materials generalizing or extolling system offerings, but no prepared material concerning the actual management operations, funding or inter-relationships with which they worked.

Statistical information available was frequently open to interpretation, with basic definitions varying with the provider of the statistics (i.e., methods for determining actual participating students varied widely, depending on the degree of follow-up, field surveys, and utilization support offered as part of each overall system). As a general rule, statistical information was available for networks with more centralized management, for the simple reason that fiscal management responsibilities were located within one agency; decentralized networks contained no single agency with a network-wide perspective or responsibility.

Another interesting discovery was that the information sought by the state of Alaska, through this study, was not available in comparable form for the nation as a whole; there has apparently not been any effort to study instructional television management and delivery options as now practiced in this country. In several of the systems studied, management and funding methods evolved from pre-existing regional institutional relationships rather than a zero-based comprehensive plan, and that there has been considerable modification (both formal and informal) of these systems over the years, as they continue to evolve.

A consequent discovery was that the existing management structures of ITV networking in most states depend in very large part on the funding and political relationships of various institutions within the state, and that these factors affect level of service to users at least as much as do technical systems, which may have received far more careful planning than the management structure for using these systems. Further evidence for this perception came from the interest expressed by many who provided information

for this report, that comparative data would be useful to operating networks, in addition to assisting the current planning efforts of the state of Alaska.

This paper is not intended as a scholarly work. Rather, it is intended to be a convenient means of comparing some aspects of ITV networks that will be of practical interest to Alaskan educators and policy makers. Most of this study's intended readership has heretofore had little practical experience with management and technical aspects of telecommunications systems, but is of late realizing that these systems may be helpful to their endeavors. Most have not had the opportunity to consider the relationships between technical system capabilities, management procedures, and the consequences of these for the level and effectiveness of service.

The authors have not detailed specific recommendations for the management or technical capabilities of a potential Alaskan public/instructional television network. Without a definition of level of service desired and the range of learner audiences to be served, such recommendations would be subject to many qualifications. Therefore, recommendations are of a more general nature, and are included within the body of the Executive Summary.

The applicability of the network models here studied can only be determined by present and potential users, as part of future planning. It is hoped that the information in this report will, by providing network profiles and comparisons, provide these users with an understanding of specific network configurations employed elsewhere, their costs, and their results.

EXECUTIVE SUMMARY

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A PRIMER OF INSTRUCTIONAL TELEVISION TERMS & SERVICES

This primer is designed to serve as a guide to the specialized terms and types of services associated with instructional television, that are used as the basis for the detailed profiles of ITV network systems described throughout this report.

For easier reference, this primer contains:

I. Introduction

II. ITV Programming
- A. K-12
- B. Higher Education
- C. Production

III. Learner Audiences
- A. Comparing ITV and Entertainment TV Audiences

IV. Networking
- A. Long Lines
- B. Local Distribution
  1. Open Broadcast
  2. Cable Television
  3. ITFS

V. Scheduling
- A. K-12
- B. Higher Education
- C. Multi-channel Networks

VI. Utilization
- A. Print Materials
- B. In-Service Training
- C. Equipment
- D. Surveys & Research

VII. Management
- A. Network
- B. State Education Authorities
- C. Local Users

I. Introduction

Instructional Television (ITV) provides programming designed for use in formal education, for learning.

Debate regarding the effectiveness of instructional television as compared to more traditional teaching techniques has gone unabated for twenty years. Research has yielded conflicting results when comparing ITV use to traditional classroom teaching methods. Research has demonstrated, however, that ITV can be at least as effective as traditional teaching methods, and that ITV can offer particularly effective information on certain topics, in certain ways. Research has been inconclusive largely due to the variety of factors critical to effective use of ITV, factors beyond the content or production techniques of a given program: whether the program or series has been properly designed and produced for the needs of students and teachers (or has been carefully selected to further specific learning objectives of the teacher); whether it is available in a format and schedule convenient to the teacher; whether necessary support services and print materials are available; and whether viewing equipment is readily available to the teacher.

It is also recognized that in certain (less populated) locations, with relatively scarce educational resources, media for instruction may offer the best short-term means of providing access to some educational opportunities. While this does not resolve the need to balance urban/rural resources for education, it does indicate a potential for delivering specialized content or information to support the local classroom teacher, using media. More specialized courses, for which small local enrollments cannot justify on-site experts, could use media to "deliver" a specialist and/or pre-produced instructional programming; two-way (interactive) audio could permit student/teacher discussion or questions.

II. ITV Programming

Instructional television programming is a teaching resource. Unlike entertainment television, instructional television series consist of specially designed, usually sequential lessons, each based on specific learning objectives. Creating ITV requires as much input from subject specialists, instructional designers, and classroom teachers, as it does from television production professionals.

Much commercial and public television programming is educational or "informational," in that it transmits new information to the viewer. ITV programming is different, in that the programs are conceived of and produced in a specific, planned sequence. The more basic skills and concepts are taught in the early programs, and the student is led on to the more difficult or advanced subject matter by the end of the series, much as in a regular classroom curriculum.

In addition, it is generally accepted today that television is better suited to some types of learning than to others, and that when most effective, ITV is utilized in conjunction with other materials, texts, and teacher-student interaction in the classroom.

A. K - 12

On the elementary and secondary levels, ITV programs are specifically designed to be used in the context of a fairly traditional student-teacher relationship, the "television teacher" reinforces or supplements the subject matter presented by the classroom teacher, who is responsible for preparing students for the concepts or facts to be viewed, and for responding to questions, initiating discussion, or developing post-viewing student activities to enhance the television lesson as part of the classroom curriculum. Print teacher guides assist the classroom teacher by providing an overview of the learning objectives of the ITV series, and provide suggested methods for teaching strategies that will tailor the use of the ITV series to the classroom teacher's lesson plans.

B. Higher Education

Instructional television programming for college students or adults is generally more self-pacing, with a variety of print materials, workbooks, reading or other assignments for the independent viewer, both before and after viewing each program in the "telecourse." When instructors are in contact (either in person or by phone) with telecourse students, it is in the role of a "learning manager," to answer questions, resolve problems, and generally assist students in maintaining their self-directing study.

C. Production

Instructional programming can be produced (usually at considerable expense) for the particular needs of a region or, most often when course content is not region-specific, can be purchased in finished form (pre-recorded) from a growing number of national producers: state public or instructional television networks; commercial or nonprofit distributors, or consortia. The majority of instructional program hours carried by any given network will be purchased from these variety of program sources (except at OECA, in Canada).

Nationally, ITV programming is more extensively available for the elementary grade level than for any other student level. The curriculum as traditionally taught in secondary, post-secondary, and other educational institutions is more specialized and varied than that taught to elementary children, with a wider range of subject matter, requiring more precisely defined content.

The paradox is that while a larger number of specialized ITV courses are needed to serve students beyond the elementary level, the total number of students available to enroll in any one specialized course are lower than for the more general elementary courses. Thus,

production of ITV courses for the secondary (and above) grade levels is relatively cost ineffective. Regional economic and social conditions can further limit a specialized course's marketability. For these reasons, producers seeking national markets commit a majority of their resources to elementary level ITV productions. However, within the past five years, several organizations (regional consortia, and outreach oriented community colleges closely associated with PTV stations) have begun producing and marketing telecourses for postsecondary students.

Production value refers to the level of sophistication of the production techniques involved. Programs with high production value employ the unique visual properties of film or video to a greater degree, using animation, on-location documentary filming, dramatic recreations of events, or fictional vignettes. These cost more money, and it is assumed are more enjoyable, graphic and effective teaching resources, although this may not necessarily be so. Low production value techniques include the infamous "talking head," which has been so ardently renounced and replaced with a wide variety of more stimulating (and more expensive) production techniques. However, for a mature student in a specialty field, whose motivation is derived from the subject matter itself and not the enjoyability of the visual presentation, lecture or interview formats can be a valid and enriching learning experience.

This lower cost format of ITV can be particularly cost effective when used in conjunction with a two-way audio circuit, for interactive lessons, permitting students to see (one-way video) and interact with (two-way audio) a teacher or subject expert physically remote from the local classroom. This format is particularly well-suited to the specialized student in the professions, government service, health care, vocational, or management training, for whom the opportunity to interact with a specialist in the field (to ask questions and share experiences) may be extremely valuable. The economy of this application (as compared to pre-recorded, more general programming) also makes it a more realistic option for small, more specialized audiences, especially those that are scattered in remote locations, unable to travel conveniently to meet with the specialist-teacher.

III. Learner Audiences

Instructional television can serve a wide variety of special learner audiences. These audiences can be defined by grade level as well as by the subject matter taught by the programming.

The most readily identified learner audiences for ITV are students formally attending public school, whether K-12 or higher education (post-secondary). In addition, ITV audiences can include audits enrolled in adult basic education courses, or working towards their General Equivalency Diplomas, adults interested in non-academic learning skills or crafts, or auditing selected college courses.

ITV is used in many states as a primary means of continuing professional education of professionals, such as attorneys, health professonals, police, and teachers. Numerous industries use ITV as a means of developing and distributing vocational courses in specific technical skills, business management, or industrial safety. A variety of state and local governments conduct workshops and seminars as well as continuing management courses for their personnel, using ITV. The most successful ITV networks appear to serve some or all of these special learner audience.

A. Comparing ITV and Entertainment TV Audiences

Commercial television, supported as it is by advertising revenues, must seek to maximize its audience, and so designs its programming to appeal to the widest range of tastes, avoiding any special interest programs. ITV operates on the opposite principle; to be most effective, ITV must program for the very specific instructional needs of a variety of smaller audiences. For example, a basic ITV series on mathematical concepts designed for first and second graders, is not useful to, and is not intended for, use with most other grade levels.

Instructional audiences become more specialized as they become older. Obviously, an instructional program of continuing education for police officers will be of little interest to the vast majority of adults (except possibly criminals).

The term "narrowcasting" is sometimes used to describe this approach to programming for special audiences. The more specialized the course, the smaller the audience is likely to be. Audience size is certainly not always the best means of assessing the value these services may have, for special groups or for society. Regular courses which update or expand the skills of health care providers far distant from health professionals or hospitals may prove to be invaluable to a patient in a remote community during an emergency, even though a small total number of persons may have watched the ITV programs.

IV. Networking

Networking provides a means of distributing programming, and consists of two basic services: 1) Long lines (or long distance) transmission, for 2) Local distribution (or local broadcast) via available local transmission facilities.

A. Long Lines

Long lines transmission is the essence of a network, a technical service involving a central network headquarters where programs originate live or on tape, and are transmitted via any one of several types of long lines to numerous local distributors. The long lines system can be wholly owned or (more commonly) leased.

The network long lines system may use cable, terrestrial microwave, or satellite circuits. Local distributors receiving the transmissions then rebroadcast live, or tape delay their broadcasts, and have varying degrees of control over local scheduling. Local distributors can be public television or commercial television stations (both open broadcast), cable television, or other closed circuits (such as ITFS).

B. Local Distribution

1. Open Broadcast

Open broadcast refers to a local distribution system transmitting by "line of sight" to all television receivers (TV sets) within the signal-receiving radius. Open broadcast transmission is limited to one signal on a specific frequency, carrying one program channel; antennas or signal translators may be required to reach beyond geographic or other obstacles and increase the signal range. Open broadcast transmitters may be used for either commercial or public programming.

Open broadcast reaches the largest number of commonly available receivers (TV sets) and can transmit to far distant receivers, depending on the type of transmitter and the amount of power authorized by the Federal Communications Commission (FCC). These transmitters are generally expensive to establish and, if broadcasting with high power, expensive to operate. These factors tend to make open broadcast useful for serving large numbers of viewers within one general geographic location (such as a large city), having generally similar programming needs. For specific instructional uses, open broadcast is well-suited for elementary (K-6) students in numerous school buildings; general interest college courses for students viewing at home (or on campus); and (to a lesser extent) for adult basic education for the home viewer.

2. Cable Television

Cable television uses coaxial cable as the means of transmitting the television signal, rather than open space. The system is a closed circuit, since it reaches selected viewers whose TV receivers must be connected to the cable circuit. Commercial cable systems charge fees for connecting subscribers to the circuit, and a (usually) monthly fee. Publicly owned, nonprofit cable television systems are also in use for transmitting ITV, usually with schools subscribing for this closed circuit service.

Depending on the specific system, cable television can typically carry upwards of eight program channels simultaneously on a single coaxial cable. With the appropriate additional equipment, cable systems are also capable of providing two-way transmission.

Cable television's additional attraction for instructional uses is its multi-channel capability. Existing commercial cable systems can

inexpensively devote one or more additional channels to instructional broadcasts; several programs intended for different instructional audiences can be carried simultaneously. Cable systems are thus capable of serving several smaller and highly specialized audiences at the same time, or of providing multiple program repeats to increase viewer access to programs.

3. ITFS

ITFS, or Instructional Televised Fixed Service, is a technology with some of the advantages of both open broadcast and cable television. ITFS transmits signals through the air, but because of the frequency of those signals and certain regulatory factors, it has some unique properties.

ITFS is capable of transmitting 28 channels simultaneously (one per transmitter) that do not interfere with standard commercial or public open broadcast frequencies. Transmitters are low power (10 watts or less), and relatively inexpensive to install and maintain; ITFS transmitters cost approximately one-tenth the cost of standard open broadcast transmitters. Non-technical staff can operate these transmitters, which have proven to be very reliable.

ITFS frequency reservations were intended by the FCC for primarily instructional applications, and thus technical production standards are more flexible (less sophisticated and less expensive) than the FCC standards imposed for commercial or public broadcasting. FCC regulations further permit ITFS frequencies to be used for a multiplicity of transmission purposes, including video, audio, computer data and hard copy (printed page). ITFS signals are received by special antennas, thus operating as a closed circuit (or confidential) network.

For a relatively large local service area, with a suitable population, ITFS has many of the advantages of a cable system without the expenses of an extensive (physical) cable network. ITFS' shortcomings, however, are that its range and signal strength are less than for standard open broadcast. Most efficient use of the spectrum allocation gives each ITFS channel a range of about 20 miles, limited to line-of-sight reception. System maintenance can be hampered by the difficulty of obtaining replacement parts, given the scarcity of these systems.

V. Scheduling

Scheduling of ITV broadcasts is very much dependent on the technical capabilities of the delivery systems used, and can be critical to the effectiveness of programming. The more conveniently ITV programming can be found in the classroom by any teacher, or at home by any interested viewer, the more likely it will be effectively, and consistently, used. The converse is also true; if access to a given ITV program is limited or requires major revisions in the classroom or the daily routine, the likelihood of use is greatly reduced.

A. K - 12

Elementary and secondary (K-12 public school) ITV is generally scheduled to broadcast one program in a series several times per week. Repeats are provided to improve access and increase the likelihood that one of the broadcasts will be convenient. This is generally considered to be satisfactory scheduling for elementary program use, since individual teachers can usually plan ahead for, and be flexible to, the scheduled ITV program. At the secondary level, however, courses are sectioned or departmentalized, and the daily schedule is not easily changed by any individual teacher. ITV utilization drops sharply at the secondary level, in part for this reason (in addition to more limited program selections).

B. Higher Education

Above the secondary level, pre-recorded ITV programming intended primarily for convenient home viewing over broadcast television generally provides two (or more) alternative broadcast times to accomodate student or adult personal schedules. In several parts of the nation, for example, commercial stations carry college credit courses during early morning and/or afternoon hours, providing additional alternatives to the public television station's open broadcasts during early evenings and weekends.

With interactive telecourses or teleconferences, this scheduling flexibility is usually not possible; students or participants must adjust their personal schedules to attend, just as they would to attend a traditional college course on campus, or a professional meeting or seminar.

C. Multi-Channel Networks

As mentioned earlier, the technical capacities of the system used to broadcast ITV can dramatically affect scheduling. In many parts of the country, local public television facilities are used to transmit instructional programs, that share the one available channel with general interest public programs. The greatest participation by public television stations in ITV broadcast is during school hours, for public school use. Public stations can be reluctant to provide this ITV service if they perceive it to attract a smaller audience than would tune in to more general interest programs at that same time of day, or if ITV broadcasts create additional burdens on equipment and staff, for which the station is not reimbursed.

Scheduling options increase when the locally available technology provides more than one channel, principally through cable television or (in some few locations) ITFS. Multi-channel capacity permits maximum opportunity to provide ITV, and repeats, during the times most appropriate for the audience served, without competition with commercial or public broadcast needs to reach the largest possible audience with more general interest programs.

Special closed circuit systems serving only educational institutions or learner audiences in a formal classroom setting, provide the greatest flexibility in scheduling, since the system is designed only for instructional use, at the convenience of participants. An example of this type of system would be an on-campus or intercampus network for specialized higher education instruction only, or teleconference networks (either audio, video, or both) designed for specified public or private use.

VI. Utilization

Utilization of ITV is most effective when a program or series is used as one part of a learning lesson, accompanied by pre-viewing and post-viewing student assignments, discussion, or activity. Utilization services, particularly teacher training and informational support, are one component of a comprehensive ITV service that is perhaps most easily neglected, possibly the least expensive or glamorous, but certainly vital to success.

All utilization services are intended to improve the ITV viewers' ability to effectively use appropriate programming. These services include four general categories of support, as follows.

A. Print Materials

ITV supporting print materials include broadcast schedules; program catalogs; teacher guides to individual ITV series, containing lesson plans, program summaries, and suggested related activities and references; student workbooks; and additional related texts.

B. In-Service Training

Specialists provide in-service training for teachers to demonstrate teaching methods and techniques for effectively selecting, preparing and integrating an ITV series for use in the classroom. Utilization specialists may provide credit courses (for recertification or other credit); formal in-service sessions as part of a school or district's overall professional development offerings; informal group or after-school sessions for building staff; or individual consultation to teachers in their own classrooms.

C. Equipment

Utilization services may include consultation in system design (by region, district, or building), including planning assistance for the purchase, installation or maintenance of ITV viewing and recording equipment; on-going maintenance service or trouble-shooting equipment failures; and training demonstration of equipment operation and off-air record procedures.

D. Surveys & Research

Teachers and students may be regularly (usually annually) surveyed regarding their use of ITV programs, as well as for recommendations for additional programming or improvements in services. Traveling utilization specialists may also be a source of this utilization information. This field data can be used to assess the degree of ITV use, identify problems or need for improvements in service, and to involve users in decision making about the services offered. In some cases, this field work may extend to extensive (formative) research concerning particular aspects of education or media, or serve as the basis for new ITV series production.

VII. Management

The management of regional or statewide ITV services generally has three essential components. Coordination of these components may be administered by an entity with other functions beyond ITV, or by a specially-created management structure intended only to provide ITV administrative services.

A. Network

One type of coordinating service offered may be technical operations of some type of long lines transmission, networking ITV program feeds for local outlets and local audiences. This networking function may extend to operation (or ownership) of stations, may include provision of utilization services or consultation, and may include television program production facilities or funding for contracted production.

B. State Education Authorities

A second general coordinating function is to work with the various educational agencies with broad responsibilities for providing services to specific learner groups; ITV services may comprise only a small fraction of the services these various agencies provide to learners. Such agencies may include a state Department of Education; a state University system or individual higher education institutions; associations or organizations serving adult basic education students; or professional associations providing training to practicing professionals (which may provide services independently, or in conjunction with a university or college); or a variety of state agencies using ITV services for staff administrative or management training, or client vocational or job skill improvement services. (In addition, ITV training program sponsors may include private businesses or business associations offering courses for credit or general personnel skill improvement.)

These agencies, public or private, may participate in ITV curricula planning for their learners (and may have legal statutory authority to do so for all ITV services to their constituents). They may pay part or all of the networking transmission costs for program feeds,

or fund production of their own programming, or acquisition of pre-recorded programs. Each agency may provide utilization services directly to their learners or ITV program users, or may contract for provision of these services.

These agencies play an important role in developing ITV services for their individual audiences, and may contribute a high percentage of the total ITV costs (for acquisition and/or distribution). They may also provide extensive opportunity for their constituents to participate in the decision making process, further involving local users.

C. Local Users

The third component of ITV management involves coordination with local users, including local broadcast outlets and local education authorities.

Local broadcast outlets may include local public television stations, licensed to a wide variety of institutions or nonprofit community groups; cable television stations; or ITFS systems. These local outlets may have their own ITV-related committees or advisory groups, and may donate or be paid for ITV transmission costs or other support services.

Local education authorities represent various learner audiences, or ITV users, and include local boards of education and their school districts; community or junior colleges; four-year colleges or universities, both main or branch campuses; and organizations representing the instructional needs of professional, business, or trades people.

These local users and/or the organizations which represent them are best suited to determining ITV program needs and convenient broadcast schedules. The critical task of ITV management is to provide the means for local user participation in program selection and scheduling, particularly when compromise solutions may be necessary to serve all users. With this necessary local input, ITV programming will be appropriate to its audience, and scheduling will prove convenient, and a system representing considerable public resources will be effective and well-utilized.

PUBLIC BROADCASTING AND INSTRUCTIONAL TELEVISION

Background

There is sometimes confusion, amongst the general public and even within the industry itself, regarding the use of the terms "educational television" (ETV), "public television" (PTV), and "instructional television" (ITV). The following summary provides the background and historical process by which two well-defined types of noncommercial broadcasting (public and instructional) evolved from the earlier, less differentiated "educational" television.

During the late 1940's and early 1950's, several national leaders within higher education recognized that the emerging medium of television would have great potential for delivering educational services to adults. Several inter-institutional organizations were established to develop this potential. Originally supported by meager university and governmental contributions, these groups were increasingly able to attract philanthropic support, most notably from the Ford Foundation. Their goal was to encourage the Federal Communications Commission (FCC) to reserve channel allocations for educational television stations before all channels were assigned to commercial broadcasters, and to maintain these reservations until educational users could organize systems and secure funds to activate these stations.

On April 15, 1952, the FCC made a series of nationwide channel reservations for educational purposes. Over the next fifteen years, local groups began to establish educational broadcast stations. Universities, state Boards of Education (acting through state Departments of Education) and local school Boards of Education (through local school districts) played critical roles in the organization and funding of these stations, often serving as the licensees. Programming was information, not entertainment, oriented, mostly geared to classroom use during the daytime, and college credit, adult basic education, or adult self-improvement courses in the evenings. In addition, the stations aired news, public affairs, and cultural programming. These latter categories of programming, while not instructional in the strictest definition, were thought to be educational in the broad sense. Educational television, or ETV, was the term used to distinguish this early noncommercial service from entertainment-oriented commercial television.

Growing public concern began to surface during the mid- and late 1960's regarding what some considered to be the shortcomings of commercial television. Educational (non-commercial) television was looked to more and more as an alternative to provide cultural enrichment and in-depth public affairs programming which some felt would not be provided by commercial television. Governmental and philanthropic support for these types of programming increased, and

during the decade 1965-1975, these same sources funded accelerated development of new noncommercial television stations and state networks. Advocates of state networking were quick to sieze upon the potential for instructional services to the schools and learners at home as an added benefit to be gained from expanded delivery of noncommercial television.

However, by the late 1960's the (unrealistic) expectations of the early prime movers, that ITV would revolutionalize public education and result in a flowering of culture and knowledge, was simply not coming to fruition. Rather than the much hoped for panacea for all educational woes, ITV, according to some research, resulted in NSD: no significant difference in student performance, whether taught with television or with more traditional teaching methods. (It has subsequently been suggested that the research failed to take into account such critical variables as teacher training in ITV use, scheduling, or the availability of associated print materials.)

Educators were forced to set limited (more realistic) goals and develop precise and verifiable methodologies for designing ITV programming and evaluating its effectiveness as a teaching tool. Previously, media professionals had taken the lead in producing ITV, much of which supplanted the classroom teacher (resulting in some teacher resistance). Educators began taking a more central role in ITV design, shifting the emphasis toward ITV designed to "supplement" the classroom teacher and introduce into the classroom the kinds of materials, techniques, and experiences not ordinarily available there. Considerable resources were devoted to surveying teachers and students, developing support material for their use (lesson plans, course outline, workbooks, etc.), and training teachers to integrate television lessons into "their" classrooms, or into individualized learning curricula (mostly for higher education).

The much-anticipated utilization of noncommercial television by postsecondary education began to founder at some older ETV stations, or simply failed to materialize at most of the newer ones. (Perhaps the single greatest irony of instructional television has been the inability of higher education to cooperatively develop or utilize state networking services, despite their early vanguard role in the ETV movement.)

Thus, evening hours on most ETV stations were not being utilized for adult education to the extent envisioned by many. In 1966 the prestigious (and first) Carnegie Commission Report on Public Broadcasting recommended massive governmental support for an information and culture-oriented nationwide broadcast service as an alternative to commercial television. The report also suggested that the term "educational television" might be limiting the audience of the existing broadcast service. The ETV stations themselves were eager to shake the label of being too "intellectual" or academic, to change their image to that of "quality television," to increase their audience and

their ability to attract government, corporate, and foundation support.

Financial support from these sources for (noninstructional) public programming was increasing, and became institutionalized through the Public Broadcasting Act of 1967, which established the Corporation for Public Broadcasting (CPB) to fund, and the Public Broadcasting Service (PBS) to administer federal and private support for "public television." Much of this developing public television programming could rightly be called entertainment, through it was generally recognized to be of greater cultural or social value than most entertainment programs available on commercial television. Non-instructional programming practically monopolized the evening schedules of most "educational" television stations, and included: concerts, theatre, dance, classic films, intellectually-stimulating discussion programs, as well as national and local news, and public affairs. The term "public television" gained wider use as a description of this broadcast programming.

Many public television stations continued to offer instructional television programs to local school districts and colleges for some portion of the broadcast day, usually daytime and/or early evenings.

A 1976 survey by the Corporation for Public Broadcasting's Office of Educational Activities gathered data from the nation's (at that time) 159 public television licensees, accountable for 250 public television stations (with some licensees operating more than one station). Their data indicated that 82.7% of the licensees provided "some" formal K-12 instructional television programs; and that 69.6% (or 110 licensees) provided "some" formal postsecondary courses on the air.

As might be expected, the definitions of educational television (ETV), instructional television (ITV), and public television (PTV) are not always used with precision in the work-a-day world of noncommercial television. Many stations and state networks retain the world "educational" in their titles, even though some may offer few or no specific "instructional" programs. In some cases, this merely indicates that they were founded prior to the Public Broadcasting Act of 1967, after which time the term "public" replaced "educational" in popular and professional nomenclature.

The extent to which individual noncommercial television stations and/or state or regional networks have maintained or strengthened their commitment to meet the particular needs of formal education varies considerably in this country.

Now that public television and instructional television have evolved their spearate audiences and methodologies, their shared use of the same statewide or local distribution systems is more the result of their common origins in "educational television" and the limited public resources available for noncommercial television in general, than it is the result of common goals. The two serve different audiences with different needs, via the same distribution system.

NETWORK MANAGEMENT CONSIDERATIONS

I. INTRODUCTION

The determination of the most desirable network management structure cannot be predetermined, but is dependent upon the particular instructional service required plus socio-economic factors. With respect to ITV, there are trade-offs for both centralized and decentralized systems and even methods for obtaining the best of both worlds. The dichotomy between centralized and decentralized networks is a convenience that enables us to begin identifying numerous alternative approaches to managing statewide ITV services.

It appears that the level of centralization of network technology and management in the systems studied, is far less the result of designer intent regarding this variable as a virtue in and of itself, than the consequence of certain historical or institutional factors. ITV service configuration evolves in response to the particular pre-existing public broadcast and long lines infrastructure of a state or the lack of same, plus the priority perceived need of the educational community.

In simplified form, the question is, "Which came first, the stations or the network?". Where several locally licensed non-commercial television stations pre-dated attempts at statewide networking the resulting interconnection services have remained loose confederations, with the stations maintaining their autonomy, both with respect to general interest public television and ITV services.

In states where there were very few or no non-commercial broadcast stations, the network commissions (or authorities) established by state legislatures instituted local broadcast outlets as well as the network interconnect with a centralized management system. The two regions sited below (Northeast and Mid-east states; Southern states) as examples of these two approaches illustrate the basic historic antecedents and evolution of each decentralized and centralized network, respectively (although these regions are not the only locations around the country in which these approaches to networking ITV are to be found).

The following two sections highlight the structures of II. Decentralized and III. Centralized network management functions. Individual subsections in each of these categories will provide comparison for system management structures.

II. DECENTRALIZED NETWORKS

A. History

In the Northeast and Mid-east states, non-commercial educational television stations began to appear in the 1950's. These were licensed

to local groups with strong affiliations with local school districts and universities, if not licensed directly to such institutions. State education agencies often played key roles in securing channel reservations and initial funding, but the focus of activity was local since educational television was not viewed as a statewide need. As the legal licensees of the stations, the local groups had complete control over the facilities.

In the latter 1960's, as the concept of "public television" gained acceptance, movements began in these states to interconnect the independent stations into state networks, under the rationale that this would result in reduced operating costs for each station and an overall increase in program selections through sharing and cooperative buys. The application of these benefits to the instructional services the stations offered, was a particular selling point which the network advocates brought home to legislatures. When the state broadcast commissions and networks came into existence, they were conceived of as vehicles to assist the independent stations and to provide a statewide framework for institutionalizing state DOE involvement in ITV curricula planning. In New York, the network was intended to facilitate the sharing of courses between campuses of the State University of New York, but this never occurred.

B. Management

The ITV coordinators at the locally licensed public television stations are the pivotal figures in the delivery of ITV services to learners. They receive input from local educators (sitting on local ITV advisory committees), interpret this local input, and participate in the program selection and scheduling process of the network or DOE. Utilization services are provided by the stations' ITV coordinators (and their staff), sometimes in conjunction with DOE. In general, the responsiveness of the ITV coordinator to local educators' needs is determined by: 1) the station's commitment to ITV; 2) the active and informed participation in the local ITV advisory committees by local educators; and 3) the method of station reimbursement for ITV services.

In some locations school districts pay to join local ITV advisory committees. These membership fees go to the station and help insure responsiveness to educational needs. In Pennsylvania (see also Orange County, California), some of the local ITV committees have an independent existence as nonprofit corporations with their own ITV professionals providing program selection and utilization services. These nonprofit corporations purchase broadcast services from the stations. This arrangement is generally acknowledged to result in locally oriented, highly utilized service. However, recent local education budget austerity, plus availability of programming via open broadcast, have undermined the districts' ability and incentive for paying for memberships. Direct state subsidies to the stations are being looked to more and more as a means of removing financial burdens from school districts.

Under certain circumstances, decentralized networks can result in decreased responsiveness on the part of broadcasters. Where local educators must rely on station staff for the bulk of ITV services and access to the statewide decision making process, there is the danger that if ITV is a low priority for the station, the needs of educators will not receive adequate attention and resources. Where direct state subsidies are paid to the stations for ITV services, there is reduced incentive for the stations to be responsive to, or encourage the participation of, local educators in defining service. In these circumstances, educators may not have a powerful network commission to protect their interests, nor will they have financial control. The active involvement of DOE in creating and enforcing ITV policies on behalf of local educations, thus becomes critical DOE's provide some support for utilization (teacher training, print materials, etc.) in addition to subsidizing program purchase and station operation.

With respect to ITV, network commissions in these (Northeast and Mid-east) states are primarily concerned with interconnection services provided to "affiliated stations," and assisting station development. They assist in coordinating the program selection and scheduling functions but do not exercise authority over the decisions of the stations' ITV coordinators or DOE.

C. Program Purchases

The network or DOE provide the coordination for the program selection process in which the ITV coordinators from the stations arrive at a common list of offerings. Recommended programs are purchased by DOE, which also participates in the selection process. New York DOE's direct programming grants to the stations enable them to independently select their own ITV programming. In effect more than 80% of New York's ITV programming is purchased in consort by all stations, since the majority of programming needs are the same and "group buys" save money; stations will, however, make unique program selections where they find it desirable and feasible. In the other states with decentralized networks, DOE retains final purchasing authority, approving stations' cooperative ITV programming selections.

D. In-State ITV Production

Decentralized networks do not have their own production facilities, but rely on those of their affiliated stations. Most stations will have at least the capability to produce local news and public affairs programs; stations in larger urban centers will have quite sophisticated film and video production capabilities. From a statewide perspective, there is an underutilized multiplicity of production capability, however, from the general interest local perpective this redundancy ensures better local service. There is no long term state commitment to support in-state ITV production. ITV production is done by affiliated stations with funds acquired from several sources, including the state on a project-by-project basis. These states have done less ITV production than those with more centralized systems.

E. Distribution Systems

Decentralized networks tend to utilize more sophisticated long lines systems, either multi-channel and/or two-directional. Thus, several programs can originate simultaneously at network headquarters (or other locations) and be available to affiliated stations. Multi-channel networks also create additional channel-hour capacity for repeat transmissions of programs. Both these factors add to the flexibility of the stations' broadcast schedule, in that the stations have several network offerings to choose from for any time slot in their local schedule, and the option of several times at which to broadcast a particular network originating program.

F. Learner Audiences Served

Networks with decentralized management structures do not serve varied instructional audiences on a statewide basis. Individual stations may be somewhat more diversified, offering an occasional college credit course. Rarely is a comprehensive service offered to any but a K-12 audience. DOE's have provided the administrative focus and financial support necessary to aggregate users (independent local school districts).

No such entity exists to do likewise for other learner constituencies. Individual campuses of state universities often exercise considerable independence from central administrations and jealously guard their "academic uniqueness." Business, trade and professional organizations are generally too unsophisticated regarding ITV to organize, advocate and plan for television use. The network commissions do not have the authority to commit the stations to participate in statewide networking for any of these learner constituencies. The stations themselves may not be enthusiastic to program for smaller instructional audiences, especially if doing so might reduce the schedule they offer to their general interest PBS audience, which they perceive to be their prime constituency. The exceptions to this observation are dedicated closed-circuit systems, not associated with broadcast stations and specifically mandated by state legislatures, e.g., the Ohio Medical Network and Indiana Higher Education Telecommunications System (IHETS).

III. CENTRALIZED NETWORKS

A. History

During the late 1950's and early 1960's, many Southern states found themselves in an educational crisis. National attention focused on Southern public school systems as the result of Brown vs. Board of Education (the Supreme Court case challenging the racially segregated "separate but equal" facilities common in many Southern states at that time) revealed that Southern school systems were functioning below the national norm. Instructional television was perceived by many Southern educators and legislators as a means to rapidly upgrade available educational resource and teacher skills, especially in smaller, rural communities, and to do so without the trauma of over-hauling local and state educational systems.

Several nationally important closed-circuit classroom television demonstration projects were established in Southern school districts and proved successful. Educational television stations were a rarity in the South at this time; most came onto the scene as the local distribution outlets for the newly developing state networks. The majority of these stations are licensed to the networks or state Boards of Education. The resulting public and instructional television services are usually statewide in character and not particularly reflective of individual stations' service areas. In all fairness, this may not be a shortcoming, if a state is fairly uniform as regards regional lifestyles and educational needs, or where local and state support are not sufficient to maintain several regional television/film production centers and/or videotape origination points.

By and large, centralized networks have continuing strong (if not primary) commitments to ITV. Instructional users rarely feel short-changed as the result of competition between general interest public broadcasting and ITV for state resources. This is in part due to the states' history of support for the "pure" ITV components as justification for the states' involvement in publicly owned and operated television.

B. Management

Southern public broadcasting networks and the associated ITV service started out as highly centralized systems. In some cases this may have been with the intent to bypass unsophisticated local educational establishments. In recent years the centralization of management has softened, and local educators, who have become more knowledgable regarding ITV, play an increasing role in most of these networks. Formal input from local educators to ITV curriculum and scheduling decisions (where it exists) is made through a series of local/regional and state ITV advisory boards or committees on which local educators sit. These boards or committees deal directly with state DOE's rather than with local stations (as is the case in decentralized networks).

In centralized networks, all stations (with the exception of the one or two pre-dating the networks) are licensed to a statewide entity, either the network or the state Board of Education. In these systems local educators do not have financial control or authority, since the ITV service is entirely state subsidized through DOE and the the network. Local input through the state advisory boards and committees is just that: advisory. However, it can be observed that a state DOE will be reasonably responsive to the direct requests of local teachers and administrators in a matter of this sort. If DOE retains final approval (either through funding relationships or statutory authority) over ITV curricula or related services delivered by the network, or provides these itself, then local educators have in DOE, an advocate with the necessary clout to protect their interests vis-a-vis the network. Local participation on advisory bodies will be meaningful.

In at least one state, Kentucky, the network seems to set de facto ITV policy due to the lack of a strong involvement by DOE. Historically, this is a very complicated situation and, within the scope of this research, it has not been possible to determine whether or not this has been a critical factor in determining the quality of ITV service in that state. The author would contend that broadcast managers can be expected to set de facto ITV policy in any network where DOE does not maintain a strong involvement in ITV. State DOE's typically are responsible for utilization services, dealing directly with school districts. The networks' prime areas of concern are interconnection services, production and assisting instructional users plan for and implement ITV services.

C. Program Purchases

Program selections are made on a statewide basis by DOE, whose choices are typically reviewed by the state Boards of Education. Local educators choose representatives to sit on the regional and/or state advisory boards/committees, which advise DOE. Statewide utilization surveys are conducted by DOE and this data regarding teacher and student program preferences is incorporated into the decision making process. Centralized networks conduct more research of this type on a statewide basis.

DOE leadership in determining ITV curricula constitutes a "decentralization," in that one component of management is removed from the network and turned over to educators. Decentralization of policy and curriculum decision making can result in a responsive and effective ITV service even if economic factors necessitate centralized production and distribution systems.

D. In-State ITV Production

Centralized networks maintain a single highly sophisticated production center at network headquarters. This facility does all in-state ITV production and the majority of the in-state PTV (general) production as well. (Some stations may have limited studio or remote production capabilities for local news and public affairs.) A considerable portion of ITV production costs are born by the network, which includes general overhead, production staff and equipment costs within its annual budget requests to the state legislatures. Out-of-pocket costs (such as film stock, processing, etc.) are paid by DOE.

Centralized networks enjoy stable funding for production from year to year possibly because of the single focus of production activity. Program design and content is typically determined by ITV specialists from DOE and consultants they may call in, who monitor the network's efforts; DOE plays an advisory role in program design and production. When production is done for other educational users, such as higher education, that user relates to the network production facility in the same manner described above for DOE and the K-12 audience.

E. Distribution

Centralized networks have single-channel distribution systems which slave all broadcast outlets to the same schedule, restricting the flexibility of broadcast of a given program. Repeat broadcasts are usually adequate for elementary level classes; some form of local tape delay, either at the local station, or in the school, is the only means to allow enough scheduling flexibility for departmentalized schools (secondary, and higher education) or professional training. Tape delay at the stations licensed to centralized networks is not common; regional, local, or building tape delay facilities are the responsibility of the local education agency or training program sponsor.

F. Learner Audiences Served

Networks with more centralized management have somewhat more success serving a larger variety of instructional users. The location of planning and administrative authority for the entire network within one organization seems to allow for the kind of negotiation, decisions and coordination required to help a heretofore naive (with respect to ITV) user through the long and complicated process of developing a statewide ITV plan. Also, there is reason to believe that network managers responsible for a comprehensive statewide programming and distribution system are more aggressive in expanding applications of their network than administrators of less centralized networks, who view themselves as managing an interconnection service for autonomous stations that may or may not want to serve specialized instructional users.

The historic involvement by influential business leaders in the establishment of some of these networks, and the legislative charge given these systems to improve the general quality of life and economic diversification of their states, helps in part to explain their outreach to postsecondary students, professions, trades and public servants. However, even for centrally managed systems, programming for smaller specialized audiences rarely takes time away from prime time general interest PTV programming. Rather, specialized ITV series will be run during non-prime time on open broadcast, or a more flexible schedule on special closed-circuit systems maintained by the network.

NETWORK COMPARISONS

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These Tables summarize the (Table I) Management factors and (Table II) System Technologies of the networks here studied into four basic categories:

DECENTRALIZED: 1) Highly
2) Moderately

CENTRALIZED: 3) Moderately
4) Highly

This network analysis is based on the degree of local broadcast facilities control (licensing and ownership); and the degree to which network transmission capability (single or multi-channel) offers local program and schedule options.

Within these tables, the following abbreviations have been used to identify the network systems used as models within the four categories:

NY	New York	MD	Maryland
PA	Pennsylvania	SC	South Carolina
OH	Ohio	KY	Kentucky
IHETS	Indiana Higher Education Telecommunications System	OR	Oregon
		ON	Ontario, Canada

University of Mid-America, as a higher education course developer providing no delivery services; and Orange County, California, as a county (not statewide) broadcast facility have not been included in this network comparison.

NETWORK COMPARISONS: Table I
Summary of Management Structures

MANAGEMENT FACTORS	Management Structure Orientation: DECENTRALIZED — Highly (NY)	DECENTRALIZED — Moderately (PA, OH, IHETS)	CENTRALIZED — Moderately (MD, SC)	CENTRALIZED — Highly (KY, OR, ON)
BACKGROUND Demographics:	No great perceived educational need brought about by economics, population patterns, etc. (IHETS established due to cost of higher ed. instructors for dispersed campus system.)		Urban population centers with dispersed rural population, economic deprivation, limited education resources (severe in SC).	
Prior to state interest in network:	Several established local public stations, locally established (and licensed).		No established local stations.	KY & OR: One local station established; ON: No established local stations.
GOVERNING BODY of Network:	None; network is within division of State University of NY.	Network Commission (state). (IHETS: Trustees, U. of Ind.)	Network Commission (state).	Network Authority (state); OR: State Bd of Higher Education.
Role with stations:	N.A. (SUNY operates network for stations).	Provides services and funds to stations; operates network for stations. (IHETS: no stations)	Licensee and operator of local stations.	Operates local stations.
Station Licensee:	Local non-profit corporations; local school Boards of Education; universities.		Network Commission or State Board of Educ.	KY & ON: State Board of Education. OR: State Board of Higher Education.
STATE EDUCATIONAL AUTHORITY for ITV Curriculum: K-12 Public Schools:	State Board of Education		State Board of Education	

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NETWORK COMPARISONS: Table I (continued)
Summary of Management Structures

MANAGEMENT FACTORS	Management Structure Orientation: DECENTRALIZED		CENTRALIZED	
	Highly (NY)	Moderately (PA, OH, IHETS)	Moderately (MD, SC)	Highly (KY, OR, ON)
STATE EDUCATIONAL AUTHORITY for ITV Curriculum (cont'd)				
Higher Education:	Board of Trustees for the State University of New York (no statewide networked higher educ. ITV).	PA: None OH: Board of Regents (no statewide networked higher educ. ITV). IHETS: Board of Trustees of Indiana University.	MD: None (individual administrations of College of the Air participating colleges. SC: None (governing boards of individual participating univ.).	KY: Council on Public Higher Education. OR: State Board of Higher Education. ON: Committee on Post-Secondary Ed. Programs
ITV PROGRAM AUTHORITY				
Selection:	Local station ITV Coordinators.	Local station ITV Coordinators, in conj. with DOE.	State ITV Advisory Committee recommendations to DOE.	DOE, based on network user surveys.
Purchasing:	Local stations, with DOE funding.	DOE	DOE	Network Authority.
SCHEDULING				
Network:	Station ITV Coordinators meet with Network staff and devise statewide feed schedule.		Determined by Network staff.	
Local:	Local ITV Committees advise station ITV Coordinators; user surveys.		Determined by Network staff. (SC: regionally programmed cable channels, secondary prog.)	
LOCAL EDUCATIONAL AGENCY Role in ITV				
Program Selection & Scheduling:	Members of local ITV Advisory Committees, chaired by local station ITV Coordinators.	or non-profit corps. advising station ITV Coordinators.	Members of state ITV Advisory Committees (by state or local appt) report to DOE and Network Commission.	No formal participation; based on user surveys. (ON: members of subject advisory groups.)

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NETWORK COMPARISONS: Table I (continued)
Summary of Management Structures

MANAGEMENT FACTORS	Management Structure Orientation: DECENTRALIZED — Highly (NY)	DECENTRALIZED — Moderately (PA, OH, IHETS)	CENTRALIZED — Moderately (MD, SC)	CENTRALIZED — Highly (KY, OR, ON)
LOCAL EDUCATIONAL AGENCY Role in ITV (cont'd)				
Overall Management & Decision-making:	DOE station grants require 20% commitment to ITV service by each station; quarterly and annual ITV Coordinator reports to DOE Commissioner; minimal enforcement.	Local agencies fund stations for ITV broadcast & utilization service; stations funded directly, or through non-profit corporations.	Formal advisors to DOE and Network Commission.	Indirectly, through support for Authority budget requests.
NETWORK PROGRAMMING				
Percent of Annual Channel-Hours:				
Instructional	20% (NY)	20% (PA, OH) / 95% (IHETS)	60% (SC) / 36% (MD)	62% (KY) / 22% (ON) / 26% (OR)
Public/Gen. Educ.	80%	80% / 5%	40% / 64%	38% / 78% / 74%
ITV PRODUCTION				
Facilities:	None maintained by Network.		Equipped, maintained & staffed by Network.	(ON: contracts with producers).
Funding:	Varies. DOE, other state agencies, universities, federal, or private sources. By contract with local stations, by project. (OH: consistent DOE production funding annually.)		At Network Center, funding stable for equipment, prod. staff, overhead. Agencies sponsoring production fund needed project supplies or travel.	Network Authority. Stable. OR: Minimal.
Design:	Determined by funding agency and contracted production house.		Sponsoring agency provides staff & cooperative design procedures.	Network Authority determines procedure.

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NETWORK COMPARISONS: Table I (continued)
Summary of Management Structures

MANAGEMENT FACTORS	Management Structure Orientation: DECENTRALIZED — Highly (NY)	DECENTRALIZED — Moderately (PA, OH, IHETS)	CENTRALIZED — Moderately (MD, SC)	CENTRALIZED — Highly (KY, OR, ON)
ITV PRODUCTION (contd)				
Instructional Content Development:	Production project funding agency.		Production project funding agency.	Network Authority. (DOE indirect role in support of budget requests.)
UTILIZATION SERVICES				
Staff Support:	Majority provided by local station ITV Coordinators and station staff; some from DOE. (IHETS: by individual universities.)		DOE staff	Network Authority staff. (OR: all by DOE.)
Funding:	DOE subsidy to local stations.	Local education agencies & DOE pay local stations. (IHETS: university budgets.)	DOE annual budget request.	KY & ON: Network budget requests. OR: DOE budget req.
RESEARCH	Station ITV Coordinators may or may not survey local teachers & students; no statewide information retrieval; utilization data estimates only.	Station ITV Coordinators more regularly survey users; no consistent statewide retrieval; utilization and enrollment data more accurate.	Comprehensive user surveys and cost data collected by Network and DOE utiliz. staff. (SC, KY, & ON: conduct considerable research, and in-depth study of issues affecting utilization, user attitudes, etc.	Comprehensive teacher surveys and cost data collected by Network Authority utiliz. staff.
AUDIENCES SERVED				
Statewide:	K - 12 public school students. General public.	OH: Health professionals. IHETS: higher educ. students.	K - 12 public school students. Higher education students. General public. Professional (continuing education.	
Local only:	Higher education, through local stations.		None	

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NETWORK COMPARISONS: Table I (continued)
Summary of Management Structures

MANAGEMENT FACTORS	Management Structure Orientation: DECENTRALIZED — Highly (NY)	DECENTRALIZED — Moderately (PA, OH, IHETS)	CENTRALIZED — Moderately (MD, SC)	CENTRALIZED — Highly (KY, OR, ON)
GENERAL CONCLUSIONS				
Advantages:	Strong locally-licensed stations; structured for local responsiveness and decision-making. Annual state funding for public broadcast includes security for ITV funding. Station's ITV service grants included within general station budget approved by DOE.	Direct local educ. agency funding to stations assures degree of local control.	More active in-state production of ITV. State public broadcast funding secures ITV support within agency budgets. Support services available on user request, at no charge. Clearly identified administration to focus activites, aggregate instructional users, & extend specialized audiences served.	
Disadvantages:	NY & PA: Inconsistent support for "pure" ITV production; emphasis more affective or general education programming. No focus for extending services to specialized instructional audiences. State funding for public broadcasting may neglect local educational needs in favor of general interest programming (for larger audience share); PTV/ITV competitive atmosphere. Local education agency budgeting for ITV services may be unreliable year to year. Lack of single comprehensive budget request can result in one (or more) component of full service omitted during state budget process.		Local stations not locally licensed. Little or no local control; little or no local production. Educational advisory input only at statewide level.	No formalized local input to decision making at statewide level, other than annual survey indicating program use, non-use, preference. Inactive in aggregating broader ITV audience (beyond K-12)

NETWORK COMPARISONS: Table II
Summary of System Technologies

MANAGEMENT FACTORS	Technical System Orientation: DECENTRALIZED — Highly (PA, OH, IHETS)	DECENTRALIZED — Moderately (SC)	CENTRALIZED — Moderately (NY)	CENTRALIZED — Highly (MD, KY, ON, OR)
BASIC NETWORK Channel Capacities: Interconnection:	Multi-channel Microwave	Microwave and cable	Single channel Microwave	
LOCAL DISTRIBUTION	Open broadcast; local stations. (IHETS: closed-circuit) Local educ. agencies operate cable, ITFS.	Two-channel Network feeds one channel; "mini" networks provide second channel to stations. Cable: 3-channel Closed-circuit: 3-channel (cable and other bldg. connects)	Open broadcast; local stations, and translators.	Cooperative local CATV outlets.
PROGRAM ORIGINATION	Operations Center and local stations. (IHETS: local campuses)		Operations Center and local stations.	Operations Center. (MD: local origin. of news, no ITV)
IMPLICATIONS FOR SCHEDULING	Multiple program repeats from network or local stations. Greater channel-hour capacity; greater flexibility.	Specific technologies selected for scheduling needs of each instructional audience: most flexible and user convenient in nation.	Programs must be used as network broadcasts (3 times per week). Local stations may tape/delay broadcast; educ. agencies may tape for classrooms.	Programs must be used as network broadcasts (2-3 times per week). Schools may tape for later use.
DEDICATED NETWORKS	PA: None IHETS: Higher Educ. OH: Medical Network	Medical Network Other interactive circuits for higher ed. and graduate courses.	None	

continued...

NETWORK COMPARISONS: Table II (continued)
Summary of System Technologies

MANAGEMENT FACTORS	Technical System Orientation: DECENTRALIZED Highly (PA, OH, IHETS)	DECENTRALIZED Moderately (SC)	CENTRALIZED Moderately (NY)	CENTRALIZED Highly (MD, KY, ON, OR)
PUBLIC TV PRODUCTION	Local public affairs at most stations; national interest (PBS) production at some urban stations. IHETS: No production	Operations Center	Local stations	Operations Center
ITV PRODUCTION	Local stations (urban "flagships")	Operations Center	Local stations	Operations Center
GENERAL CONCLUSIONS				
Advantages:	Multi-channel feeds provide locally-determined open broadcast or closed-circuit schedules, suiting local needs and program select. and greater use convenience.	Two statewide open broadcast schedules provide reasonable user convenience.	Less expensive start-up, lease, maintenance and operations costs due to centralized organization, negotiation, and/or aggregation of users. Less duplication of services or facilities.	
	Multiple repeat broadcasts.	Repeat broadcasts.		
	One dedicated network for spec. users.	Several dedicated networks for spec. users.	Generally provides state initiation of services not otherwise available, particularly where economic or population factors (especially rural) prohibit local initiation of services.	
	Cable: locally programmed (K-12)	Cable: regionally programmed (9-12)		
	IHETS: multi-channel closed-circuits allow simultaneous service to several users.			

continued...

NETWORK COMPARISONS: Table II (continued)
Summary of System Technologies

MANAGEMENT FACTORS	Technical System Orientation			
	DECENTRALIZED		CENTRALIZED	
	Highly (PA, OH, IHETS)	Moderately (SC)	Moderately (NY)	Highly (MD, KY, ON, OR)
Advantages (cont'd):	Some production capability at most stations; sophisticated (PBS) production at major urban stations.		Some production capability at most stations; sophisticated (PBS) production at major urban stations.	
Disadvantages:		Production capability only at Operations Center.	Single-channel network feed slaves all stations and classrooms to single schedule. User convenience provided by network program repeats, or by off-air taping in schools.	Production capability only at Operations Center.

PENNSYLVANIA pp. 46-61
Pennsylvania Public Television Network (PPTN)

Local autonomy of public television stations with commitment to serving local schools is the basis of PPTN Commission's decentralized, multi-channel ITV networking. Total network annual channel-hours devoted to 81% public and 19% instructional programming. PPTN serves K-12 learners, with formal educators' participation in ITV policy and funding; other learner audiences are not actively served. Previously strong state ITV support has undergone recent decreases; some effort to increase to previous levels.

Capital investment:	$ 1,300,000
Annual network operations (FY 79):	1,692,000
Annual cost of ITV services (FY 79):	880,000
Annual cost per student (K-12)	$ 1.03

NEW YORK pp. 62-76
State University of New York (SUNY)/New York Network

Highly autonomous locally licensed public television stations receive public (80%) and instructional (20%) program feeds from decentralized, single-channel New York Network. Variety of state agencies (with territories evolving over many years) provide comprehensive support for K-12 ITV. Inter-campus network not developed; no statewide higher education ITV networking. Some history of public/instructional competition for resources.

Capital investment (network only)	$ 1,000,000
Annual network operations (FY 79):	1,500,000
Annual cost of ITV services (FY 79):	3,373,927
Annual cost per student (K-12)	$ 2.11

OHIO pp. 77-91
Ohio Educational Television Network

Network Commission operates decentralized, multi-channel network, feeding public (81%) and instructional (19%) K-12 programs. Active local educators' councils advise public station's ITV coordinators. Higher education ITV not networked, but result of local station/university efforts. Strong state support for ITV networking includes subsidies to stations and local advisory councils, program acquisition, and production funds. ITV performance during emergency school closures further strengthens continued strong state support.

Capital investment:	$ 9,100,000
Annual network operations (FY 78):	1,420,255
Annual cost of ITV services (FY 78):	2,868,248
Annual cost per student (K-12)	$ 1.92

ORANGE COUNTY, CALIFORNIA pp. 92-110
Coastline Community College/KOCE-TV, Huntington Beach

KOCE-TV is a public television station licensed to community college district, with strong commitment to ITV for higher education and K-12 learners, providing county-wide daily single-channel broadcasts of public & instructional programs. Top-quality production facility at KOCE-TV combines with detailed telecourse design procedures, and Coastline Community College's extensive student outreach services, result in high utilization by at-home students; K-12 services are local option.

Capital investment	$ 4,500,000
Annual network operations (FY 79)	488,237
Annual cost of ITV services (FY 79)	1,314,500
Annual cost per student (K-12):	$ 2.12
(Higher Education):	$ 78.75

MARYLAND pp. 111-128
Maryland Center for Public Broadcasting (MCPB)

MCPB is operations center for centralized, single-channel network feeds to public television stations (licensed to Maryland Public Broadcasting Commission); networking programming is public (63%) and instructional (37%), both K-12 and higher education; some continuing and adult education. High quality program producer and actively exploring full range of telecommunications.

Capital investment (80% state; 20% federal)	$ 6,300,000
Annual network operations (FY 79):	2,200,199
Annual cost of ITV services (FY 79):	3,293,023
Annual cost per student (K-12):	$ 5.88
(Higher Education)	318.58
(Cont. management)	33.00
(Adult Basic Ed.)	4.14

SOUTH CAROLINA pp. 129-151
South Carolina Educational Television Network (SCETV)

SCETV is the most sophisticated multi-channel open broadcast and closed circuit network in the nation. Specific technologies are conscientiously developed to serve instructional users: K-12; higher education; professionals; and industry. Strong emphasis on research and support services for users.

Capital investment:	$ 15,000,000
Annual network operations (FY 77)	2,833,831
Annual cost of ITV services (FY 77):	6,995,198
Annual cost per student (K-12)	$ 15.95
(Higher & Prof. Ed.)	103.70
(Teacher Develop.)	120.82

KENTUCKY pp. 152-174
Kentucky Educational Television (KET)

KET offers primarily K-12 instructional programming, with some higher education, adult basic education, and general educational programs (totaling 62% broadcast hours); public programming represents 38% of KET's single-channel broadcasts. High quality ITV production (with national market), extensive research, and utilization services conducted by this highly centralized network; local educators' are not formal participants in decision making. Long (and frustrating) cooperative process involved many segments of Kentucky's society in establishing KET's political base and strong state support.

Capital investment:	$ 10,400,000
Annual network operations (FY 77-78 av.)	3,500,000
Annual cost of ITV services (FY 77-78 av.)	4,250,000
Annual cost per student (K-12)	$ 9.07
(Higher Education)	426.00
(Adult Basic Ed.)	39.00

OREGON pp. 175-188
Oregon Educational & Public Broadcasting Service (OEPBS)

Centralized single-channel network serving public television stations licensed to OEPBS, providing K-12 (14%); higher education (9%); and public (77%) programming. Current political controversy over goals of instructional and public television.

Capital investment:	$ 5,140,000
Annual network operations (FY 79):	1,500,000
Annual cost of ITV services (FY 79):	451,000
Annual cost per enrolled student (K-12):	$ 0.69
(Higher Education)	108.00

ONTARIO pp. 189-205
Ontario Educational Communications Authority (OECA)

OECA operates a centralized, single-channel for K-13 instruction (22%); higher education (4%); and public (74%) programming. On the air since 1971 (now considerably expanded), OECA receives strong provincial support; produces consistently award-winning instructional and public programs (international market); conducts comprehensive research and utilization services; and fiercely competes for audience share.

Capital investment:	$ 17,000,000
Annual network operations (FY 79):	2,309,000
Annual cost of ITV services (FY 79):	10,308,000
Annual cost per student (K-12)	$ 10.93
(Higher Education)	Unavailable

INDIANA pp. 206-219
Indiana Higher Education Telecommunications System (IHETS)

IHETS is a comprehensive, highly decentralized closed circuit multi-channel telecommunications (audio/video) network serving seven member institutions of higher education in the state. Participating institutions use network primarily for course delivery from main campus to branch campuses, with wide variety of services and scheduling options. IHETS is the technical "common carrier" service only; member institutions retain full responsibility for developing courses, or software.

Capital investment	Unavailable
Annual network operations (FY 79):	$ 1,600,000
Annual cost of IHETS services (FY 79)	2,000,000
Annual cost per student (Higher Education):	$ 65.00

UNIVERSITY OF MID-AMERICA (UMA) pp. 220-235
Lincoln, Nebraska

UMA is a higher education telecourse production consortium; no campus and no transmission facilities. UMA members are eleven institutions of higher education, in seven states; courses are now being marketed nationally. With federal support ending, UMA is concentrating on becoming self-supporting; recently developed detailed and comprehensive ITV design and production procedures.

Capital investment	$ -0-
Annual network operations	-0-
Annual cost of UMA course development (FY 79)	2,400,000
Annual cost per student (Higher Education):	$ 1,097.20

CONCLUSIONS and RECOMMENDATIONS

I. CONCLUSION: Instructional television can transmit information and teach valuable skills to a broad spectrum of learners of varying ages (K-12 through higher education), and occupations, improving the general quality of educational opportunity. This can be especially true in circumstances where factors of distance and population size make it impractical to place specialty teachers on-site in numerous locations. Availability of professional continuing education (interactive) can be as important in an urban setting as in a remote site. It is unlikely that the various potential users can separately plan for, implement, or maintain such services on an individual station basis.

> RECOMMENDATION I: Representatives of various learner audiences should be encouraged to identify ways in which instructional television can assist their work, and formulate plans for doing so; costs and means of implementing such desired services should be determined. Policy makers will then be prepared to assess the advisability of such development. Any resulting networking of instructional program services should broker leased or owned long lines services to a wide variety of public and educational users. A multi-channel network should be given serious consideration.

II. CONCLUSION: There are complex and inter-related benefits and disadvantages to be realized in considering centralized or decentralized management and technology for networking; neither approach is singly superior. Consideration must be given to the total system services, types of institutions sponsoring service, and their existing relationships and sources of funding.

Instructional broadcast needs differ from public broadcast needs. Instructional television is provided to serve those persons enrolled in formal education, not the general public. There is reason to believe that in some of the systems studied, the differing requirements of the two broadcast services (instructional and general public), when carried by a common network, have at times been in conflict. In some instances, instructional television services may have suffered. A greater tendency exists for neglecting the specialized needs of instructional audiences served through autonomous, locally-licensed public television stations, loosely affiliated with decentralized networks.

Paradoxically, it is just this type of network which best serves the social goals of public non-commercial television: to reflect the character and concerns of the licensees' service areas. What is more, the two audiences differ in their required programming, schedules, and utilization. In the best of all possible worlds, there would be two separate networks, each administered to serve its identified audiences. It is, however, unlikely that the state of Alaska could support two systems.

RECOMMENDATION II-A: When considering the requirements and objectives of public (general interest) broadcasting, especially for diversified audiences (such as those in Alaska), a decentralized network serving existing and future local licensees is preferred.

RECOMMENDATION II-B: Realistically, in Alaska it may be possible for instructional broadcasting to expand its role in education only through interconnections providing both general interest public television programming and instructional television programming for special learner audiences. With this limitation, management considerations for any joint development must insure that the specialized needs of instructional users are not neglected, and that local accountability for instructional service is maintained. If the two broad classes of users (public broadcasters and educational institutions) can establish an equitable allocation of service through planning and cooperation, both will provide improved service to Alaskans and thereby realize increased support and security through the association.

III. CONCLUSION: By state law, the Alaska Public Broadcasting Commission is responsible for developing policies and assisting development of public broadcasting, and a wide range of additional telecommunications technologies, for the state.

RECOMMENDATION III-A: Continued future planning for the expansion of public television's role in education should be initiated by the Alaska Public Broadcasting Commission, leading to a definition of instructional broadcast needs, formulation of specified state policy, and planning for technical and management systems guaranteeing educators' decision-making authority.

RECOMMENDATION III-B: Continuing exploration of the feasibility of instructional television should proceed from a definition which recognizes the unique needs of instructional audiences and institutions: K-12; higher education; adult basic education; continuing professional education; and vocational and management training. This formal definition should be included within the enabling legislation of the APBC (by amendment) or any other entity empowered to operate any instructional television network for the state of Alaska.

RECOMMENDATION III-C: Study of these issues by the Alaska Public Broadcasting Commission should include participation in that governing body by members appointed specifically to articulate the needs of instructional users. Statutory amendment should be initiated, if necessary, to seat (preferably) three additional members as official repre-

sentatives of educational institutions serving: 1) K-12 learners; 2) higher education learners; and 3) continuing education and adult learners. These representatives should be policy making administrators from their respective educational organizations, and be full voting members of the Commission.

RECOMMENDATION III-D: Consideration should also be given to the addition of ex-officio Commission members, a method in practice in other state broadcasting commissions or network management councils to improve participation in and awareness of state broadcasting needs by those whose official support is significant. Ex-officio status should be considered for legislative representatives, either a minority and majority member from each house (as in Pennsylvania), or finance and education committee chairmen from each house (as in South Carolina), or through some other similar and appropriate designation.

IV. CONCLUSION: By state law, the Alaska Board of Education is responsible for developing policies and regulations for public school (K-12) education.

Instructional television is most effectively utilized when supported by local education administrators and teachers. Participation by these people in determining ITV curricula, scheduling and utilization services increases both their support for ITV and the suitability of these services for learner audiences. Where local distribution is provided by an independent local broadcaster, direct payment by local education authorities for ITV broadcasts has proven to be an effective means of insuring that the resulting services are responsive to local education needs.

RECOMMENDATION IV-A: The State Board of Education should be the officially recognized institution to represent the needs of K-12 learners, with final authority for K-12 ITV curriculum and support services (see Recommendation III-C).

RECOMMENDATION IV-B: Planning for the use of instructional broadcasting to meet the needs of K-12 learners should include establishment of local or regional ITV committees, composed of local educators. The purpose of these committees should be to define the precise local services and programming needed, subject to guidelines established by the State Board of Education; the local (regional) ITV committees should have formal participation in the Board's program selection process for all sponsored broadcasts (such as the ITV programming now broadcast to many communities via satellite).

In locations where K-12 ITV broadcasts are locally delivered by an outlet or distribution system not directly owned

or licensed to a local education authority (or in some other manner accountable to that authority), the local (regional) ITV committees should be funded by direct grant from the State Board of Education to purchase ITV services from the local distribution system, as well as to provide or purchase ITV support or utilization services necessary for effective and meaningful use of instructional broadcasts.

V. CONCLUSION: Higher education has had an inconsistent history of ITV use. Lack of cooperation and clear-cut leadership during early phases of delivery systems development has been a major cause of this inconsistency.

RECOMMENDATION V-A: Technical services (or networking) of instructional television for higher education should be managed by a single organization, either a university or college, or a division for higher education within overall network administration. This technical coordination should serve only as the "common carrier" for the higher education users, and not become involved in programming or utilization services.

The programming and utilization functions for higher education ITV services should be provided by the individual universities and colleges issuing credit for sponsored programming, as they see fit.

RECOMMENDATION V-B: In situations where several institutions wish to form consortia for production, such consortia should evolve through the leadership of one institution with a strong commitment to ITV, and with a primary relationship with (an) ITV producer(s).

VI. CONCLUSION: Some instructional users and learner audiences have programming and scheduling needs that are best served by specialized non-broadcast local distribution.

RECOMMENDATION VI: Institutions or organizations representing specialized instructional learner audiences (such as the professions, state agencies, graduate schools, and trades and crafts) should be informed of any planning undertaken to further instructional benefits of broadcasting (see Recommendation III-A), and invited to formulate plans for use of delivery methods other than broadcast (such as closed circuit networks) for inclusion in the overall network planning process.

VII. CONCLUSION: In locations where instructional television has been utilized by a broad spectrum of learner audiences, its value is widely recognized, and it receives support. The private sector has often been influential in establishing these networks and using them for some training needs.

RECOMMENDATION VII: The private sector in Alaska (including the professions) should be informed of any planning undertaken to further instructional benefits of broadcasting, and progressive business leaders should be included in the overall network planning, and advocacy, process.

RECOMMENDATIONS FOR FURTHER STUDY

The networking systems studied in this report were carefully selected to reflect the criteria of the funding agencies, who sought description of broadcasting systems with characteristics reflecting Alaska's current situation and interests.

In the course of this research, a number of systems and issues were discovered to have potential relevance to any continued Alaskan planning. Those who find this study and comparative models useful, and who may continue to explore the feasibility of educational broadcast networking for Alaska, may wish to extend this report's methodology for additional fact-finding. Possible areas for further study are identified below, with recommended resource organizations or networking systems.

Instructional Audio Networks:

University of Wisconsin-Extension (WEX) provides extension services via statewide audio instructional circuits, and teleconferencing.

West Virginian Wesleyan University (Buchanan, West Virginia) provides statewide audio credit courses; self-supporting.

Regional Instructional Television Broadcasting:

Southern Educational Communications Authority (SECA) is the largest regional consortium of educational state agencies, providing instructional TV program feeds, cooperative purchasing, and other support services; some experimentation with satellite broadcasting.

Satellite/Regional ITV Broadcasting:

Appalachian Educational Satellite Program (AESP) provides instructional programming via satellite to widely dispersed geographic regions in thirteen Appalachian states; provides very extensive outreach and support services for clients.

Multi-Cultural Populations:

State of Hawaii provides ITV broadcasting (and in-state production) for its multi-cultural population; similar to Alaska in lack of proximity to U.S. mainland, etc.

ACCESS, Edmonton, Alberta, Canada, provides programming for its multi-cultural and minority population, similar in many respects to Alaska's minority residents.

Interactive Cable Television:

QUBE, Columbus, Ohio, provides multi-channel service to subscribers, featuring two-way program response system.

ITV as core in-school curriculum:

American Samoa, in the early 1970's, rapidly developed a comprehensive ITV network providing core curriculum lessons daily to the territory's K-12 schools. While changes have subsequently evolved in this system, its developmental history may provide significant to Alaska.

Role of commercial broadcasting:

Review of the role played by commercial broadcasting interests in states or regions that have developed statewide public and instructional broadcasting networks may help to identify assistance (or hindrance) public networks have received from commercial interests.

On-site visits:

Consideration should also be given to the significance of visits to those networks identified here, or after further study, as providing relevant models for Alaska. An initial visit to South Carolina is now recommended.

NETWORK PROFILES

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GUIDE TO PROFILES

The following NETWORK PROFILE narratives are organized according to the outline on the following page.

Profiles may be read in total, for a complete overview of all aspects of system development, management structure, services, users, and costs; or

Sections of each profile may be studied, depending on reader interest, providing comparison of selected factors among all networks here contained.

1.0 Background
- 1.1 History
- 1.2 Governing Body
- 1.3 Audiences
  - 1.3.1 K-12
  - 1.3.2 Higher Education
  - 1.3.3 Continuing Education
  - 1.3.4 State Agency
  - 1.3.5 Adult Basic Education

2.0 Organization
- 2.1 Networking
- 2.2 Organizations with Statewide Purview
  - 2.2.1 State Department of Education
  - 2.2.2 University
  - 2.2.3 Public Broadcasting Commission
  - 2.2.4 (Other)
  - 2.2.5 (Other)
- 2.3 Local Organization

3.0 Management
- 3.1 Purchase/Produce Decisions
- 3.2 Production Procedures
- 3.3 Scheduling Decisions

4.0 Network Configuration
- 4.1 Technology and Service
- 4.2 Implications for Local Scheduling

5.0 Programming
- 5.1 Purchase
- 5.2 Production

6.0 Utilization Services
- 6.1 Print Materials
- 6.2 Reception Equipment & Maintenance
- 6.3 Teacher In-Service Training

7.0 Special Services

8.0 Other Users
- 8.1 K-12
- 8.2 Higher Education
- 8.3 Continuing Education
- 8.4 State Agency
- 8.5 Adult Basic Education

9.0 Cost Data
- 9.1 K-12
- 9.2 Higher Education
- 9.3 Continuing Education
- 9.4 State Agency
- 9.5 Adult Basic Education

10.0 Comments

STATE OF PENNSYLVANIA

Management & Operations

Local autonomy of P/ETV stations with commitment to serving local schools is the basis of Pennsylvania's K-12 ITV networking; ITV distribution to schools is based on level of local interest and funding. Other learner audiences are not actively served.

Pennsylvania Public Television Network Commission
Established in 1968 by legislative action, to provide networking for existing P/ETV stations, and expand general interest public programming as well as ITV distribution. Twenty-two members include wide range of educational and general public interest groups or state agencies. Commission receives independent, direct annual funding from Pennsylvania General Assembly.

Pennsylvania Public Television Network (PPTN)
Network provides microwave 4-channel simultaneous video, one-channel FM audio feed to state's seven public television stations. Daily broadcast origination at PPTN Operations Center in Hershey; remote origination possible for special feeds. Programming of general public interest, and 6 hours/day K-12 ITV (or 19% of all broadcasts). PPTN offers state grants to local stations to support general operations, and assists station securing federal grants or funding.

ITV Committee (K-12 advisors) consists of chairmen of local ITV Councils at each P/ETV station; DOE specialist coordinates Committee's program preview and selection recommendations to PPTN and DOE.

Higher Education Advisory Committee (HEAC) established by PPTN in 1974; members include various university representatives and PPTN staff; relatively inactive in establishing PPTN service plan for higher education ITV service.

Pennsylvania Department of Education (DOE)

Bureau of Instructional Support Services maintains film/tape library and duplicating service for schools; purchases ITV programs recommended by PPTN's ITV Committee and local ITV Councils, for network broadcast; coordinates state participation in ITV production, through national consortia; assists districts by technical consultation for equipment purchase; two ITV utilization specialists provide training at school request. DOE traditionally provides annual subsidy for administrative costs to local ITV Councils; recent state budget cuts may eliminate most of this local programming and utilization subsidy service to the local Councils.

continued...

STATE OF PENNSYLVANIA (cont'd)
Management & Operations

Public/Educational Television Stations (P/ETV stations)
Seven open broadcast stations, locally licensed.

ITV Councils advise each P/ETV station, composed of educators in region or district served by station; may be only advisory to station personnel, or active in soliciting funds and assisting school ITV utilization. Some Councils are independently supported by district paid memberships, and purchase ITV from station and conduct own utilization school services.

STATE OF PENNYSLVANIA

Funding
(Based on FY 1977 & 1979 Agency Budgets)

CAPITAL INVESTMENT	
Pennsylvania Public Television Network	$ 1,300,000
Annual maintenance, engineering & operations PPTN Networking Services	$ 1,700,000

ANNUAL COST for Instructional Broadcasting	(FY 77)	$ 1,880,000
	(FY 79)	$ 880,000

	FY 77	FY 79
Pennsylvania Public TV Network		
Station Support (19% ITV)	450,000	498,611
Networking (19% ITV)	300,000	321,571
PPTN Total	750,000	820,128
Pennsylvania Dept. of Education		
Admin. grants to Councils	175,000	-0-
Direct station aid for ITV bdcst.	450,000	-0-
ITV program materials	450,000	-0-
Bureau of Instr. Support Admin (20% of total)	55,000	60,000
DOE Total	1,130,000	60,000
TOTAL state support for ITV	$ 1,880,000	$ 880,000

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS (FY 77)	ENROLLED STUDENTS (FY 79)	ANNUAL COST PER STUDENT (FY 77)	ANNUAL COST PER STUDENT (FY 79)
K-12 Public Schools				
Total Enrollment	2,400,000	2,262,000	$ 0.78	$ 0.43
Regular Viewers (42%)	1,000,000	950,000	$ 1.88	1.03
Other		Undetermined		

I. STATE OF PENNSYLVANIA

1.0 Background: Networking of K-12 ITV is provided in Pennsylvania through a well-defined and institutionalized co-operative effort among state agencies, school districts and non-profit corporations. Public television in Pennsylvania grew out of early educational applications by stations founded with close ties to school districts, and intending to devote a major part of their service to schools. Local activity pre-dated full-scale state involvement and throughout the development of public educational television in Pennsylvania, local autonomy has always been a priority. The existence of locally licensed stations precluded any direct line of authority to a statewide entity.

Local action aimed at starting non-commerical stations began as early as 1952 in Philadephia, Erie and Pittsburgh. By 1955 WQED in Pittsburgh was one of the first community (public) stations on the air in the country. The first state funds for educational television were appropriated in 1963, i.e., $970,000 to the then Department of Public Instruction. Support from the Department of Education (DOE) has continued at varying levels ever since, taking the form of feasibility studies for new stations, direct aid to existing stations, and participation in a comprehensive ITV service. By 1967 there were nine stations operating in Pennsylvania, two each in Pittsburgh and Philadelphia and one each in Erie, Scranton/Wilkes-Barre, Allentown/Bethlehem, Hershey and at Penn State University. Financial resources to build and operate these stations came from local community efforts, funds through H.E.W., and from state appropriations.

1.1 History: Beginning in 1959, a series of studies aimed at creating a statewide network were carried out, and different plans emerged, none of which were instituted due to lack of state funding. In 1967 Governor Raymond P. Schafer, hoping to take advantage of the national momentum which had just resulted in the formation of the Corporation for Public Broadcasting, appointed the Governor's Committee on Public Television. This group was to make recommendations on: 1) creating a statewide network as soon as possible; and 2) creating a Pennsylvania Corporation for Public Broadcasting. In 1968 the Governor's committee made its final recommendations that a statewide network should be created and operated by a public television corporation. By November of that same year, the General Assembly had passed and the Governor approved an act creating the Pennsylvania Public Television Network (PPTN) Commission and defining its duties and responsibilities, one of which was to create and operate the network. An appropriation of $1.3 million for the first year was passed as well. By May 1969 the network was operational.

The PPTN Commission was intended to insure that the broad spectrum of Pennsylvania residents would realize full advantage of the new national public television resources for cultural and public affairs programming. However, the historical connection between public television and its educational users in Pennsylvania was recognized and strengthened as the Governor's

plan called for increasing funding to DOE for the specific purpose of supporting instructional television.

1.2 Governing Bodies: The legislation which established the PPTN Commission sometimes distinguishes between "educational" and "public" broadcasting and in other sections refers only to "non-commercial education broadcasting," as the type of service the commission was intended to foster. No mention is made of separate areas of authority for the two types of programming nor for a formal role for the Pennsylvania Department of Education.

The Commission is an independent entity, funded directly by the General Assembly. Of the twenty-two members, the Governor appoints six to represent the general population, and the professions, and one representative each for public and private education. Ex officio members include:

Superintendent of Public Education,
Chairman of the State Arts Council,
Chairman of the PPTN operations committee,
A member from the governing board of each of the P/ETV stations (nine),
One minority and majority member from each house of the General Assembly.

The concerns of public educators are represented through their representatives on the Commission and through an institutionalized management and coordinating system created through mutual agreement of all parties. (See Sections 2 and 3, below)

1.3 Audience: The PPTN is used to network K-12 programming during school hours, five days each school week, (19% yearly broadcast hours), and for PBS programming during the remainder of broadcasts. Programming specifically targeted for well-defined, smaller instructional audiences is not carried via the network. To varying degees these other instructional audiences are served by local P/ETV stations and educational institutions. No statewide data for the number of such users is available. (See Section 8).

1.3.1 K-12 Audience: The PPTN estimates that in excess of 950,000 K-12 students regularly watch ITV in Pennsylvania, 42% of the states' total K-12 enrollment.

2.0 Organization:

2.1 Networking: The PPTN provides the networking function through broadcast interconnection service (to be described in Section 4.1) and the coordination of network-wide curricula and scheduling decisions, which involve people on the local level and in the Pennsylvania Department of Education. The PPTN makes no direct charges for any of these services, which are considered an integral part of PPTN's service to the state. In addition, PPTN makes numerous categories of grants to local stations and serves as liaison for several categories of federal assistance to

the stations. While none of these are for the specific purpose of ITV, many (i.e. grants for new equipment and staff training) are undoubtedly indirectly supportive of local ITV services.

2.2 Organizations with Statewide Purview:

2.2.1 Department of Education (DOE): The Pennsylvania DOE provides financial support for the purchase or production of ITV programs and print materials through its Bureau of Instructional Support Services. The Bureau provides technical expertise for and is a partner in the program purchase decision making process. DOE provides support for local utilization services, and a cash subsidy to local ITV Councils. Recent budget cuts have severely limited all of the above mentioned services, forcing local ITV Councils and local school districts to rely more on their own resources (see Sections 9 and 10). DOE also maintains a film and tape library, and duplicating service.

2.3 Local Organizations: All P/ETV stations are autonomous, and licensed on the local level to a variety of corporations and institutions. Each station has a local ITV Council whose membership is made up of station staff and representatives of local school districts which pay for membership rights. These ITV Councils receive support from any combination of state, federal or local sources with which to implement locally specified ITV services, including utilization.

In two regions, the ITV councils are independent non-profit corporations with their own staffs. For example, the Allegheny Educational Broadcasting Council located in western central Pennsylvania, charges member school districts $1.00/student/year. The AEBC provides member school districts with a variety of utilization services (see Section 6), and coordinates with WPSX-TV, the public television station licensed to Pennsylvania State University, and with commericial station WJAC, for broadcasts to AEBC's service area. The independent ITV Councils (such as AEBC) contract with the local P/ETV station for ITV services. This arrangement is generally acknowledged by observers of Pennsylvania's ITV as resulting in the most responsive local services and commitment to ITV by teachers and administrators, including school district budgets for ITV.

In five regions, the ITV Councils are adjuncts of the P/ETV stations, chaired by the station ITV director and relying on station staff for coordination and services. Local educators sit as members on these councils, which vary in their effectiveness to articulate local education needs, and thus vary in the quality of resulting services. Some are active, while others serve as little more than a rubber stamp for decisions made by station staff.

Pennsylvania's public television stations receive their support from a variety of sources. According to a PPTN survey, averages for all stations were as follows:

	Average	Range
Contractual Services for ITV	22%	24 - 29%
Special Services & Productions	21%	3 - 27%
Donations	20%	6 - 26%
State Appropriations	18%	9 - 56%
Foundation Grants	9%	
Colleges and Universities	6%	
City and County Govts.	4%	

Smaller stations are more dependent upon ITV contractual services and state appropriations; larger stations earn more through contributions and special production services.

3.0 Management:

3.1 Purchase/Produce Decisions:

3.1.1 Network Purchase/Produce Decisions: Pennsylvania Public Television Network takes the lead in this process through its ITV Committee, made up of the chairmen of each of the local ITV Councils and two persons from the Pennsylvania Department of Education. One is a specialist in ITV and the other is a curriculum specialist in the subject area being considered. PPTN staff gathers a preview sampling of new ITV series from across the nation which the PPTN ITV Committee screens, discusses in terms of statewide curricula, local needs and programming already being utilized. A prioritized listing is made up. Two programs from each series on the prioritized list are scheduled for airing during Thanksgiving week. Teachers, the local ITV Councils, and school boards are advised of the showings. After the programs have been aired, local ITV Councils distribute questionnaires to teachers and administrators in their areas and tabulate the resulting evaluations in local priority lists. PPTN staff then collate the priority lists from the local ITV Councils, and forward these results to the Pennsylvania Department of Education, Bureau of Instructional Support.

The DOE then considers other factors before developing a final priority ranking for purchase, including:

1. seven-day recording rights, where obtainable
2. unlimited audio-visual use rights if possible
3. duplication rights
4. availability of teacher and student materials either on a limited basis, or mass duplication use rights basis
5. highest station usage

The DOE staff then proceed down the list to purchase as many of the series as possible until they exhaust the budget for ITV program (a line item in the DOE's annual request). These series are then delivered to PPTN's Operations Center in Hershey for distribution statewide via the network.

In the event the PPTN ITV Committee feels there is an overriding need for a series not yet available through existing sources, Department of Education funding can be diverted for production. This is usually done via cooperative arrangement with any of the multi-state consortia which exist for this purpose. Neither the DOE nor the PPTN are equipped or staffed for quality ITV production.

3.1.2 Local Purchase/Produce Decisions: A local ITV Council which feels one of its particular needs has not been met by the PPTN's program selection process is free to purchase or produce independently. This has only been a realistic option for the larger stations/councils serving larger school districts. While several P/ETV stations in Pennsylvania have high quality production capabilities, recent budget restrictions for education in general and ITV in particular, have meant that local stations/ councils tend to stay with PPTN programs (and the savings of large scale buys).

3.3 Scheduling Decisions: In consultation with local stations/ councils, PPTN staff draw up a proposed schedule of feeds which is distributed to the stations for review and modification or additional feed requirements. (Presumably the stations/councils are informed about and are considering the needs of classroom teachers in their areas.) PPTN staff then collates all information to make up a final PPTN ITV interconnection schedule for all program feeds.

4.0 Network Configuration:

4.1 Technology: The PPTN leases a common carrier microwave transmission system connecting all seven public television stations in Pennsylvania. This system can carry as many as four simultaneous television feeds and is also used for FM radio networking. The system is not ordinarily used in an "interactive" mode, though remote transmissions can originate elsewhere than the Network Operations Center in Hershey (for example, legislative news coverage from the capital in Harrisburg). Ordinarily all transmissions originate at the Operations Center and are distributed simultaneously to all points on the microwave circuit. The network delivers a program to the local P/ETV station which simultaniausly transmits it via open broadcast to classrooms. Most P/ETV stations devote six hours/day from 9:00 AM to 3:00 PM, to ITV broadcasts. In addition, some commercial broadcasters carry an hour or two of ITV per day. Programs may also be delivered to the classroom via cable television, where school districts have access to these. Tape delay centers are the responsibility of the school districts.

The PPTN is a member of the Eastern Educational Network (EEN) and is connected to the EEN's interstate video feed. The EEN started as a consortium of Northeastern states but has taken members from other parts of the country, aggregating ITV users for more economical group buys and network programming among

Northeastern states via terrestrial and satellite circuits. Programs originating, live or on tape, from EEN via WGBH in Boston, can be fed to PPTN through a connection point in Philadelphia. In actual practice, PPTN prefers to originate from the Hershey Operations Center whenever possible, reducing the variables (and potential problems) involved in EEN feeds.

1978-79 Program Originations:

PROGRAM SOURCE	HOURS	% TOTAL HOURS
PPTN Originations	1,767.00	87.6%
EEN Originations	131.75	6.5%
Station Originations	116.25	5.8%
TOTALS	2,015.00	100.0%

4.2 Implications for Local Scheduling: Due to the multi-channel capacity of the PPTN microwave network, as many as four programs are simultaneously transmitted to all P/ETV stations in the state. This channel-hour capacity affords PPTN a better chance to make a specific program available at the time it has been requested by a station. Repeat network wide transmissions of a program multiply the P/ETV stations' opportunities to broadcast any one show at the locally desired time. P/ETV stations usually broadcast any given show two or three times each week, to give classroom teachers flexibility.

Elementary level teachers usually have little trouble finding at least one convenient broadcast. Secondary and intermediate level teachers, due to the more rigorous requirements of their class schedules, may find no scheduled broadcast suitable. These teachers could use ITV if a system of off-air taping for later playback were available. However, only about 15% of Pennsylvania teachers using ITV have access to the facilities of a staffed and equipped media center or library. Some local ITV Councils do arrange for physical distribution of tapes to their schools.

5.0 Programming:

5.1 Purchase: Virtually all ITV programming carried via the PPTN is purchased from the major recognized producers for this market. PPTN provides teacher access to 60 major nationally distributed ITV series.

5.2 Production: ITV production is not the forte of the PPTN or its member P/ETV stations. State support simply is not there. On occasion, local ITV Councils and/or school districts do produce ITV for local needs, but this is generally of a technically unsophisticated nature. The larger stations, while capable of quality production, do so for general interest public broadcast programming, with its larger audience.

6.0 Utilization Services: The Pennsylvania Department of Education and the local ITV Councils both provide utilization services to the schools. The local ITV Council maintains closer and regular contacts with school districts, individual schools and teachers than does DOE. Member school districts appoint a designee to represent them on their local Council, usually an assistant superintendant or media specialist, who takes a lead role in coordinating the delivery of utilization services to teachers within each school district.

6.1 Print Material: Teacher guides and student workbooks are usually purchased from the distributor of the ITV series, the cost assumed by the DOE when it purchases the series. Distribution of print materials is done by the local ITV Council through its contacts with the school districts, and individual schools. ITV Councils will also print a local schedule booklet for the particlar broadcast schedule of the P/ETV station with which it is affiliated, and program guides for any series which it has purchased independently of the PPTN. Newsletters on ITV developments are common offerings as well.

6.2 Reception Equipment & Maintenance: Neither the PPTN nor the DOE directly provide funds for purchase or maintenance of television viewing equipment: this link in ITV service is left to the school districts. There is no reliable data available concerning the numbers of TV's in Pennsylvania schools. It is general concensus at PPTN and DOE that most teachers who want to utilize ITV have reasonably convenient access to an operating TV set. The Department of Education does provide a technical consulting service to help school districts design and purchase the most economical and effective reception systems.

6.3 Teacher In-Service Training: Again, there is an informal division of responsibilities between the local ITV Councils and DOE for providing this service. Some local ITV Councils have their own staff utilization specialist, working with the school districts' designees on the local ITV Council, or directly with contact persons in individual schools to arrange and present training sessions with teachers. Generally speaking, ITV Councils that are independent of P/ETV stations are more aggressive in providing direct personal assistance to teachers through seminars, workshops, classroom visits etc. DOE has two full-time utiliaztion specialists to serve the state's schools, who are available for teacher in-service training in response to requests from school districts.

7.0 Special Services: The PPTN does not provide educational communication services above and beyond distribution of instructional TV and radio programming. Other communications technologies are utilized by the DOE (such as CAI, CMI), however these are not part of PPTN's service.

8.0 Other Users: Educational groups other than the K-12 public schools do not now use PPTN. The network has had a history of limited involvement with only two other user groups:

8.2 Higher Education Users: Several individual institutions of higher education use ITV, but there is no statewide networking involved. Those institutions active in ITV have made their own arrangements for local broadcasts. The types of courses offered are not unlike those described within other portions of this study (see other state or regional network profiles). According to PPTN, among the most active in Pennsylvania are the University of Pittsburgh, Pennsylvania State University, and Temple University in Philadelphia. In the past, attempts have been made by PPTN and others to bring colleges and universities together in Pennsylvania for the purpose of a statewide network or consortium. The latest effort is PPTN's Higher Education Advisory Committee (HEAC), which is made up of PPTN staff and representatives of various colleges and universities. This committee was formed in December of 1974 and is yet to come up with any specific plan for PPTN service for higher education.

8.5 Adult Basic Education Users: At one time PPTN did offer a GED series to the stations. This was not included in the daily ITV schedule, but was part of the general programming (late afternoon, evenings or weekends) of the stations. Arrangements for this series were carried out with the program managers of the stations, not the ITV directors. Over the years many stations dropped the GED series from their schedules, so that PPTN no longer networks it. Some individual stations still broadcast the series locally.

9.0 Cost Data: The major conduits of state support to ITV in Pennsylvania have been the PPTN and the state DOE. Until 1977, DOE provided direct subsidies to public stations/ITV Councils for their administrative costs, and direct subsidies to stations to help defray the costs for broadcasting ITV programs. In addition, DOE provided funds for the purchase of ITV programming.

For FY 1978, the first two categories of support were dropped from DOE's budget, placing the full responsibility for support to the ITV Councils/stations ITV activities on the stations and local school districts, a responsibility they have been able to shoulder (albeit with some difficulty, especially in smaller districts).

For FY 1979, ITV program purchase support by DOE "fell through the cracks" during the budgetary process. The Councils/stations are absorbing this cost as well this past year, with some (stop-gap) assistance from PPTN. There are indications, however (see Section 10.0, Comments), that this situation of deteriorating state support for ITV in Pennsylvania may be reversed.

The following two sets of cost data indicate the traditional level of state support for ITV based on FY 1977 levels, contrasted with the reduced funding evident in FY 1979:

Estimated Level of Pennsylvania Support for ITV

Based on FY 1977 Agency Budgets:

Pennsylvania Public Television Network (PPTN)

Station Support	($2,600,000 x 19% ITV)	$ 450,000
Networking	($1,640,000 x 19% ITV)	300,000
Non-ITV Program.	($1,600,000)	
TOTAL PPTN Budget	$5,840,000	
TOTAL PPTN ITV Support (Est.)		$ 750,000

Pennsylvania Dept. of Education (DOE)

Grants to Councils - Admin. ($25,000/Council x 7)	$ 175,000
Direct station aid for ITV services	450,000
ITV program materials	450,000
Bureau of Instructional Support Admin. costs ($275,000 x 20%)*	55,000
TOTAL DOE ITV Support (Est.)	$ 1,130,000
TOTAL State ITV Support (FY 1977 Est.)	$ 1,880,000

Based on FY 1979 Agency Budgets:

Pennsylvania Public Television Network

Station Support	($2,624,270 x 19% ITV)	$ 498,611
Networking	($1,692,480 x 19% ITV)	321,571
Non-ITV Program.	($1,700,000)	
TOTAL PPTN Budget	$6,016,750	
TOTAL PPTN ITV Support (Est.)		$ 820,128

Pennsylvania Dept. of Education

Grants to Councils - Admin.	-0-
Direct station aid for ITV services	-0-
ITV program materials	-0-
Bureau of Instructional Support Admin. costs ($300,000 x 20%)*	$ 60,000
TOTAL DOE ITV Support (Est.)	$ 60,000
TOTAL State ITV Support (FY 1979 Est.)	$ 880,000

* Estimated 20% of Bureau's administrative costs support ITV.

9.1 K-12 Cost Data: The portion of PPTN's budget applicable to ITV include networking and overall station operations support costs (excluding non-ITV program related costs). Given that 19% of PPTN's total channel-hours annually are devoted to ITV, PPTN's support for ITV networking and station broadcasts is estimated as 19% of total PPTN costs in these categories.

In FY 1977, the state of Pennsylvania spent $1.88/student for each of the estimated 1 million public school students actively enrolled as regular viewers of ITV, or a total of $0.78/student for each of the 2.4 million students enrolled in school in the state. This total state expenditure for ITV of $1.88 million amounted to 0.04% of the state's total K-12 educational budget.

In FY 1979, the state of Pennsylvania spent $1.03/student for each of the estimated 950,000 public school students actively enrolled as regular viewers of ITV, or a total of $0.43/student for each of the 2.4 million students enrolled in school in the state. This total state expenditure for ITV of $880,000 represented 0.02% of the state's total K-12 educational budget for the year.

Assuming an eight-year life for any instructional television series, the Pennsylvania DOE estimates a cost of $0.11/student/year per ITV series.

10.0 Comments: The PPTN is noteworthy for the technologically sophisticated network it provides the state's public/educational television stations and the local scheduling flexibility it affords. The management of services offered by PPTN (including ITV), is premised on the concept of PPTN being a service to the stations, rather than the stations being outlets for the network. There are historical reasons for the high degree of local autonomy, evident as well in the ITV service. The overall K-12 ITV service is marked by a decentralized decision making process, with local ITV Councils (affiliated with P/ETV stations) playing key rolls. This system has been one of the nation's more successful in terms of developing responsive locally defined and delivered service as well as generating local funding.

However, state funding may not always be reliable where there is lack of concentrated responsibility for the comprehensive ITV service. Recent state budget cuts for ITV are a case in point. Pennsylvania's reliance upon public television stations to provide ITV open broadcast distribution to schools takes advantage of cost efficiencies. However, it has also created the possibility that the stations' smaller ITV audience may be neglected within the overall priorities of the public television stations. Where station management and active local ITV Councils have made ITV a high priority, this has been avoided.

Perhaps the most outstanding shortcoming of PPTN has been the lack of statewide instructional services to more diverse audiences such as higher education, continuing education for professionals, business persons and teachers. Undoubtedly this is a consequence of Pennsylvania's decentralism, though perhaps not a necessary consequence. It is impossible to say whether this results from a lack of real commitment on the part of PPTN, those institutions representing the potential instructional audience, or the stations.

The lack of statewide availability for televised adult basic education, seems also to have suffered from the lack of concentrated responsibility and advocacy. The stations' placement of this type of programming within the purview of program managers rather than ITV coordinators can be a contributing factor. It is generally assumed that adults will be watching television in the evening hours, that portion of the broadcast schedule coordinated by the station's program manager. Thus from a "common sense" managerial perspective, it makes sense to relegate GED via TV to the program manager and not the ITV coordinator. However given the program manager's concern with cultural and public affairs programming, GED programming, with its much smaller audience, is susceptible to neglect or abandonment if there is not a vocal user constituency of students or educators.

The strength of the paid membership ITV Councils has been undermined to some extent by open broadcast distribution which permits "pirating" by non-paying districts. In addition, the ability of school districts to join is dependent upon variable local education budgets, for there is no statewide program of ITV reimbursements to districts. Thus, while Pennsylvania's decentralized ITV service has demonstrated responsiveness to local K-12 educators, this is not universal or without financial disadvantages.

Recently introduced state legislation proposes to restore and stabilize ITV support within DOE. This proposal would create a budget category through which DOE could subsidize station/Council ITV activities, providing funds to the Councils which they in turn would use to lease up to 900 hours of broadcast time each year from the stations. In addition, $500,000 would be budgeted to DOE for ITV program acquisition.

The channeling of ITV broadcast subsidies through the local ITV Councils has the potential of strengthening public television stations' responsiveness to local educators. Certainly it will have this effect where the Councils are independent nonprofit corporations. In those locations where the Councils are adjuncts of the stations, again the level of active educator participation and advocacy will be critical. In locations where station staff actually set de facto policy for the local ITV Councils, stable

funding from DOE (in effect going "directly" to the stations) could possibly have the opposite effect than that intended, by reducing incentives for station responsiveness to local educators.

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Bureau of Instructional Support Services
Pennsylvania Department of Education

G. Robert Gibson, Director
Program Operations
Pennsylvania Public Television Network

Telephone interviews with:

Richard Cassell, Chief
Division of Educational Communications, Technology & Media
Bureau of Instructional Support Services
Pennsylvania Department of Education

Blaze Gussic
Bureau of Instructional Support Services
Pennsylvania Department of Education

Archie Tinelli, Field Services Coordinator
Richard Daily, Executive Director
Allegheny Educational Broadcasting Council

STATE OF NEW YORK

Management & Operations

Instructional Television service in New York has evolved over the years into a highly decentralized system providing K-12 programming through networking services to eleven P/ETV stations.

New York State Board of Regents
Governor-appointed Board responsible for all public education (including support for wide variety of cultural opportunities beyond formal instruction). In 1950's, Regents reserved educational television channel frequencies designated by FCC for New York State, and initiated local educational (public) television development through charters to local Community (or ETV) Councils.

University of State of New York serves as administrative agency of Regents, providing support for public broadcasting and ITV through:

Department of Education (DOE) provides administrative support for K-12 education to the state's 762 school districts.

Commissioner of Education designates representative to each P/ETV station's local advisory ITV Committee (usually a superintendent). Commissioner's designee and station ITV Director submit quarterly and year-end reports.

Bureau of Mass Communications maintains 1200 title film/tape loan library for schools; funds P/ETV station general operation (20% of station grants must support ITV service); administers $100,000 revolving fund as seed money for in-state ITV production projects (used to secure additional project funds).

Bureau of Educational Communications maintains a production facility for internal DOE needs, and for PSA's of ITV programming and other special services; assists school district purchase of ITV equipment through technical consultation and purchase reimbursement ($500,000 fund in FY 79).

State University of New York (SUNY) governed by its own Board of Trustees (within the overall University of the State of New York), administering the state's post-secondary system (64 campuses), and the New York Network.

continued...

New York Network provides microwave single-channel television network service to the state's (locally licensed) P/ETV stations. Two-way capability at five stations; one-way receive capability at all 11 stations. Network feeds ITV (K-12) and public (general interest) television programming for station direct or delayed broadcast. SUNY campus interconnecting ITV network not developed.

Public/Educational Television Stations (P/ETV Stations) Developed through Board of Regents' local charters; nine stations now licensed to non-profit local councils; each station has ITV local advisory committee, and staff ITV director. In addition to nine stations initiated by Regents, one station is licensed to the City of New York, and another to the New York City Board of Education. Stations provide daily open broadcast of general interest public (approximately 80% of broadcast schedule) and K-12 instructional (approximately 20%) programming. Feed schedule is determined by receiving stations; pre-emption of network for local origination possible at all stations.

Community Councils initially established by Board of Regents' charter to develop local public stations have become non-profit corporations holding local station license; members represent variety of local community or regional civic, arts, and public interests.

ITV Committees established by each P/ETV station to advise ITV programming and support services; varying in level of activity and effectiveness. Committee recommendations are advisory to station ITV director. Commissioner of Education receives regular reports from each ITV Committee/station.

STATE OF NEW YORK

Funding
(Based on FY 1979 Agency Budgets)

CAPITAL INVESTMENT		
P/ETV Stations (11)		Undetermined *
New York Network		$ 1,000,000
Annual maintenance, engineering & operations (Network Operations)		1,500,000
ANNUAL COST for Instructional Broadcasting:		$ 3,373,927
New York Network Operations $1,500,000 (20% ITV)		300,000
New York Department of Education		
Bureau of Mass Communications		2,239,927
Station grants (20% ITV)	1,824,127	
Salaries	319,800	
Tape Duplication	96,000	
Bureau of Educational Communications		834,000
Production	30,000**	
Local Equip. Purchase	450,000**	
Program Acquisition & Dist.	115,000	
Other	15,000	
Salaries	224,000	

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS	ANNUAL PER STUDENT COSTS
K-12 Public Schools		
Total Enrollment	3.3 million	$ 1.02
Regular Viewers (48%)	1.6 million	$ 2.11
Other Instructional Audiences		Undetermined *

* Undetermined: Comprehensive statewide data would require extensive compilation of budget detail from local educational authorities, stations, university campuses, state agencies, and private or professional organizations; this detail is not currently collected or available from any state agency.

** Does not include additional federal funding received.

II. STATE OF NEW YORK

1.0 Background:
In New York State, the responsibility for individual functions which together make up a comprehensive ITV service has been assumed by numerous organizations in piecemeal fashion over the years. Individual organizations moved to provide a given service in response to a particular circumstance or plan. Circumstances changed but fiefdoms remained, resulting in a highly decentralized, if not labyrinthine service. This process, much more than a total system approach, characterizes the evolution of ITV service in New York State. All the component parts for a comprehensive service are there however, and, generally speaking, they are coordinated.

New York's public educational television stations are a strong and independent factor in the system. State support to the stations and ITV (thus far) is stable. There is no central public broadcasting commission. There have on occasion been attempts to create one, but these have stalled, partly due to the resistance of the independent stations, which prefer their highly autonomous status. Elsewhere, public broadcasting commissions were created to establish networks or to foster station development; in New York these needs have already been met without a commission. If such a commission were created at all in New York, it would serve the purpose of centralizing already existing services and possibly expanding them.

1.1 History: The New York Board of Regents, an appointive body responsible for all public education in the state, reserved all the TV channels designated by the FCC for non-commercial educational purposes within New York (Sixth Report and Order, FCC, 1952). "Community Councils" were granted charters by the Board of Regents for the purposes of establishing "educational" television stations. These Councils had ties to the educational communities in their locale, but also represented the full spectrum of (public) interests in their service area. The Community Councils (or local ETV Councils as they were also referred to) became the licensees of the stations. They have no direct lines of authority to any statewide entity, beyond their original creation by charter from the New York Board of Regents.

In 1959, WNED-TV, Buffalo became the first educational station on the air in New York State, followed in 1962 by WMHT-TV, Schenectady.

The Bureau of Mass Communications within the State Department of Education would play an active role in funding developing educational TV stations by making grants for 50% of the initial capital outlay and 50% of the first year's operating costs. State subsidy for operating costs was reduced by 10% each succeeding year of station operation.

It was anticipated that the State University of New York (SUNY) would become a major user of television as a means of sharing courses and faculty among campuses and providing educational opportunities in the home. A 1962 plan for a statewide network

called for interconnection of the state's public television stations and SUNY campuses. In 1967, SUNY established and began operating the New York Network (NYN), which at that time connected the state's five public television stations. By 1972, New York had nine public television stations on the air (based on initial Board of Regents' charters), plus two more stations that had been established independently by New York City, connected by SUNY's New York Network. However, the planned interconnection of SUNY campuses never came about (See Section 10).

Disappointment at the failure of the SUNY colleges to come together with an ITV plan, plus concern for apparent underutilization of K-12 ITV, led to a program audit of ITV by the New York State Legislature in 1973. As the stations had come into existence, they had set up local ITV Advisory Committees, made up of local educators. Participating school districts paid the stations for ITV services. The committees, while technically advisory, were in effect quite active and the stations were responsive, due to the ITV revenues the member districts generated. Local education budget cuts in the late 1960's and early '70's resulted in reduced payments to stations for ITV, and reduced services. Open broadcast availability of programming resulted in "pirating" of the service by non-paying districts. Thus, limited local school district funding and pirating were undermining the incentives to the districts to join the ITV Committees, and for the stations to be responsive to the districts' needs. Service was deteriorating.

As a result of the legislative audit (1973), changes were made in the financing of local ITV services, to take the burden off the local school districts. The Commissioner of Education issued new regulations (backed by legislation for the needed funding) for a system of yearly direct general broadcast service support to the stations from the Department of Education (DOE). One of the stipulations was that stations had to apply a portion of the DOE grant (a portion to be determined by the Commissioner) to ITV services, and had to establish local ITV Committees to advise them on the instructional television needs of the local schools (See Section 2.3). The Commissioner appointed a local superintendent to be temporary chairman of each ITV Committee, whose job it was to ensure representation of all segments of the educational community and organize the committees. The temporary chairman would later become an ex-officio member of the ITV Committee and (together with the station's ITV director) would report quarterly to the Commissioner.

1.2 Governing Bodies: The New York State Board of Regents are responsible for all state-supported public education in New York, as well as many cultural services which the state provides its residents. The Regents sit as the governing board of the University of the State of New York. (In this context the word "University" means a governmental department charged with administering educational and cultural affairs, much as the term is used by the French, not a teaching institution.) Within the University of the State of New York are the state libraries, museums, the Department of Education (DOE) and the State University of New York (SUNY), which is a teaching institution. The President of

the University of the State of New York is also the Commissioner of the Department of Education. SUNY, while technically within the University of the State of New York, has its own Board of Trustees which functions independently of the Board of Regents.

The DOE is ultimately responsible to the Commissioner of Education (who is also the President of the University of the State of New York), and to the Board of Regents. SUNY, which operates the New York Network (NYN), is responsible to its own Board of Trustees. The P/ETV stations are responsible to their licensees, local non-profit corporations, called Community (or ETV) Councils.

1.3 Audience: The New York Network (run by SUNY) primarily transmits programming for a K-12 ITV audience and a general interest PBS audience. (See Section 8 for more information on specialized audiences.)

1.3.1 K-12 Audience: The New York State DOE estimates that 1.6 million, or 47%, of New York's 3.4 million K-12 students watch ITV regularly.

2.0 Organization:

2.1 Networking: SUNY's New York Network provides an electronic interconnection to deliver the programs which the stations have selected. (See Section 3 for discussion of programming and scheduling.)

2.2 Organizations with a Statewide Purview:

2.2.1 State Department of Education: New York's DOE includes two Bureaus (divisions) that contribute support to ITV. Both also have responsibilities in areas other than ITV. The Bureau of Educational Communications provides some utilization services directly to school districts (see Section 6.2). It also maintains an in-house production facility for DOE. This facility is not intended to produce high quality ITV programs, but rather serves the internal communications needs of the Department, such as in-service training, and also produces PSA's concerning upcoming ITV broadcasts.

The Bureau of Educational Communications coordinates the construction and installation of locally-owned and operated translators and cable systems in the Appalachian portion of New York State (see Section 4.1). The Bureau locates and acquires educational films available free of charge from governmental and industrial sources, and coordinates a system of regional duplication and distribution for these. The Bureau develops and assists local districts in implementing many educational technology systems, from audio-visual to computer-aided instruction.

The Bureau of Mass Communications has over 1200 individual titles in its film and tape library which it loans to schools and P/ETV stations. The Bureau also provides direct financial support to the stations for general operations; these DOE station grants require 20% commitment to the purchase and broadcast of ITV programs.

The Bureau also funds ITV production by a variety of producers (see Section 3.2).

2.2.2 University: The New York Network is part of the central administration of the State University of New York (SUNY). The Network Director answers to SUNY's Associate Chancellor for Public Service, whose responsibility it is to mobilize and coordinate SUNY's resources (physical plant and equipment as well as personnel) to assist and encourage private sector investment in New York State, and to help meet the special needs of state and local agencies. The New York Network provides a variety of media services to this overall effort, of which the networking of instructional and PBS programming is just one.

2.3 Local Organizations; P/ETV Stations: Delivery of ITV to the classroom is accomplished by open broadcast by each of the state's P/ETV stations; a majority of each station's ITV programming is provided by network feed. When stations aren't broadcasting ITV, they carry general interest (PBS) television. Each station has an ITV Director who is a trained professional, and an ITV Committee made up of members of the local educational community. The ITV Committee has an advisory function only, with state support for ITV programs and broadcast services going directly to the P/ETV stations.

This direct state (DOE) support to P/ETV stations in New York began in 1973, when ITV services were in a rapid decline. Immediately following the initiation of state support, a DOE survey showed a tripling of use:

REGULAR ITV USERS	1972-73	1973-74	% OF INCREASE
Students	387,000	1,100,000	284%
Teachers	11,063	32,765	296%
Schools (buildings)	1,016	3,121	307%

The trade-off has been the loss of direct school district control over local ITV budgets. The ITV Committees which advise the P/ETV stations vary considerably in the effectiveness with which they ascertain the needs of local educators and shape station ITV policies and services (see Section 10).

3.0 Management: Local educators have input into the ITV decision-making process (in varying degrees) through their local station ITV Committees. The quarterly and annual reports which are filed by the (DOE) Commissioner's appointee to each local ITV Committee in cooperation with the station's ITV Director, give the Committee an institutionalized means of expressing their concerns directly to the Commissioner of Education (see Section 10).

3.1 Purchase/Produce Decisions: New York's P/ETV stations purchase ITV programming independently or through their membership in ITV consortia such as the Eastern Educational Network (EEN). The DOE plays no part in P/ETV stations' decisions regarding purchase or use of existing ITV series. The stations employ their own ITV Directors who assess education needs based on local ITV use, arrange

for the station's ITV Committee to preview and evaluate new offerings, and make selections using this advisory information.

The state DOE does play an active role in supporting ITV production within New York, through the Bureau of Mass Communications. The ITV Committees at the stations file quarterly and year-end reports with the Bureau, outlining, among other things, their policy recommendations for the state and specifying subject areas in which ITV programming is needed. The State Board of Regents sets priorities for DOE support of television production. According to one DOE official, these priorities tend towards social and cultural learning more than strictly-defined subject areas. For example, the ongoing series "Vegetable Soup," teaching children to appreciate the unique contributions of numerous minority ethnic groups, is produced for the Bureau of Mass Communications, which arranged federal (HEW) funding. The decision to produce a new ITV series is made by DOE but must be approved by the Board of Regents. Local ITV Committees have no formal role in the decision-making process beyond their initial recommendations via the year-end reports to the Commissioner.

3.2 Production Procedures: DOE's Bureau of Mass Communications has a $100,000 revolving fund for program production. In addition to this source of funds, the Bureau can contract with or receive grants from any variety of state or federal agencies, or private organizations, on a project-by-project basis. The Bureau raises approximately $900,000 from other sources each year, for an average annual expenditure of $1 million for in-state production. The Bureau attempts to combine the interests of the Board of Regents, funding organizations, and the local ITV Committees' recommendations in seeking production funds. Once a "package" has been negotiated with the Regents' approval, an executive producer from the Bureau's staff is assigned to the project, and contracts for production services. Recognized procedures for ITV production design and evaluation are employed. The resulting series is available without cost to New York users, and is distributed nationally for a fee through Great Plains National Instructional Television Library. Revenues from national distribution return to the revolving fund for program production, to keep it at its $100,000 level to assure future project seed money.

This system for producing ITV has tradeoffs. A predictable level of funding is not available from year to year. A new "package" must be put together to finance any series or individual program. The state, by contracting for production, saves the expense of maintaining and operating a central production facility. State production contracts help to maintain production capabilities at the P/ETV stations, although stations earn income from other sources. While this support may result in duplicating facilities and production capabilities at the stations, it furthers the state's policy that the state-supported P/ETV stations be capable of providing quality production to meet specific local or regional needs. The state's P/ETV stations have no monopoly, however, on bidding for DOE production contracts. Independent producers, craftsmen and artists benefit from state contract work, and provide expertise, creativity and perspective not always available "in-

house" at the stations.

3.3 Scheduling Decisions: The ITV Directors from all the P/ETV stations work out a statewide ITV distribution schedule for the New York Network. About 80% of the ITV programming carried by the network is used by all stations. The scheduling decisions of the ITV Directors are to maximize (within the limits of conflicting demands) the availability of programs at the times most convenient to the stations and the schools.

4.0 Network Configuration:

4.1 Network Technology: The New York Network is a leased telco microwave system. The mainline provides full duplex (two-way) video transmission between the network headquarters and each of five major cities across the state. Thus, network feeds can originate from New York City, Schenectady, Syracuse, Rochester, or Buffalo. The secondary "branches" of the network provide simplex (one-way) receive capability to the smaller cities of Binghampton, Watertown, Platsburg, and Garden City. For purposes of simultaneous network-wide distribution, there is only a single-channel capacity.

Network headquarters, housed in a state office building in Albany, represent an approximate capital investment of $1 million for equipment. The annual operating budget is $1.5 million. The network can be fed directly from EEN in Boston (less than 5% of network originations). The independent local stations have production and tape recording equipment of varying sophistication. Local origination, live or from tape, is possible to permit each station to provide local programming of interest to distinct regional audiences.

While it is not common knowledge, much of central southern New York is within the Appalachian Mountains, extending northward through Pennsylvania. In this region, it has been necessary to establish translators to provide an adequate signal through the mountainous terrain. These translators are licensed to local Boards of Cooperative Education (BOCES) and were paid for by Appalachian regional assistance programs.

4.2 Implications for Local Scheduling: The single-channel statewide distribution network coupled with single-channel open broadcast for local distribution, limits teacher selection to one program at any time. What flexibility for teacher use there may be is the result of repeat network transmissions of a given program, or tape delay for broadcasts by the local station. Both of these have the effect of giving the teacher alternative times at which to use any program. With an average of two or three repeats of each program each week, the elementary teacher can usually live with this system. There are fewer repeats of secondary programming, which it is assumed will be taped off-air at the schools for later use. While videotape recorders are commonplace in New York's secondary schools, DOE can provide no reliable data on the number of staffed and equipped libraries or media centers serving the secondary schools.

5.0 Programming: The overwhelming majority of New York's ITV programming is purchased by local P/ETV stations from national ITV distributors, and is intended for integration into traditional curricula in the classroom. New York State-sponsored production tends to be less geared to traditional curricula than towards such areas as health, affective or social learning, consumer and/or job-seeking skills, etc. The subject matter of state-sponsored production efforts reflects the concerns of the state agencies or private sources of funds which cooperate with DOE for the project.

6.0 Utilization:

6.1 Print Materials: As part of their ITV funding agreement with the (DOE) Bureau of Mass Communications, the local P/ETV stations are obliged to provide utilization services to the school districts. The ITV Director at each station is responsible for distributing print materials to teachers and students in a timely fashion. The stations also provide schedules of ITV broadcasts to the schools. Stations may not charge for these services beyond their own out-of-pocket expenses for additional printings.

6.2 Reception Equipment and Maintenance: DOE's Bureau of Mass Communications provides technical consultation and written specifications for schools planning equipment purchases, and also administers a reimbursement fund for such purchases. For FY 79, the budget was $500,000 to serve 762 school districts.

6.3 Teacher In-Service Training: This is a responsibility of the ITV Director at each P/ETV station. In-service training pertains to use of the specific series which the station has selected for the year.

The Bureau of Mass Communications produced a videotaped course for teachers entitled "On Visual Learning," which deals with the general principles of mediated instruction, and is available free of charge.

7.0 Special Services: The New York Network does not provide special telecommunications services beyond networking for broadcast.

8.0 Other Users: The New York Network does not transmit instructional programming statewide for audiences other than K-12. Individual stations do serve some additional learner audiences. For example:

- Several stations broadcast college credit courses in conjunction with local colleges or universities.
- Some stations will offer televised teacher in-service courses in conjunction with colleges. These are usually brief, one-credit courses. DOE will evaluate the course materials and requirements and may grant certification credit for them.
- Continuing education programs for other types of professionals are not provided by the nine Regents'-chartered P/ETV stations. New York City's municipally-owned television station, WNYC, broadcasts courses to upgrade management skills of city employees.

As mentioned earlier, the New York Network is the media arm of SUNY's Division of Public Service, working in close cooperation with numerous state agencies, individual SUNY campuses and the private sector. Typically, the New York Network provides on-location video production capability plus post-production facilities for particular projects. These include college level instructional programs or telecourses, industrial management or technical training courses, agency public information programs, campus sporting events and performances, or even outright promotion of New York State as a place to do business. The New York Network also provides system design consultation to above-mentioned users.

9.0 Cost Data: ITV is utilized by a variety of learner audiences in New York State. However, K-12 is the only group served by a comprehensive statewide, cooperative effort, for which statewide costs can be fairly readily identified. Information concerning the financial details of services for other learner audiences would have to be compiled from a myriad of local education authorities, P/ETV stations, university campuses, state agencies, and private and professional organizations; this data is not presently collected or available from any single source.

9.1 K-12 Cost Data: New York State's support for K-12 ITV services is detailed below. Federal and local monies are not included in these calculations. Note that the DOE's Bureau of Educational Communications receives $3,200,000 from the federal government for production, and $2,000,000 in support of the Appalachia distribution system, neither of which are included here (FY 1979).

Regulations established by the DOE's Commissioner of Education specify that 20% of direct aid to station's (from the Bureau of Mass Communications) be used to support K-12 ITV services by the stations. The author's estimates indicate that, in practice, approximately 17-18% of New York Network channel-hours are used for K-12 ITV transmissions to the stations. For the purposes of consistency, the 20% figure has been used to pro-rate the New York Network's level of service to the K-12 audience.

Estimated Annual Costs of K-12 ITV Support
(Based on FY 1979 budget data)

New York Network		
Operations ($1,500,000 x .20)		$ 300,000
New York Department of Education		
Bureau of Mass Communications		2,239,927
Direct aid to stations ($9,120,633 x .20 ITV share)	1,824,127	
Salaries	319,800	
Tape Duplication	96,000	

Table continued...

Estimated Annual Costs of K-12 ITV Support (continued)

Bureau of Educational Communications		834,000
Production	30,000 *	
Local Equipment Purchase (including Appalachia Proj.)	450,000 **	
Program Acquisition & Dist.	115,000	
Other	15,000	
Salaries	224,000	
TOTAL ANNUAL K-12 ITV SUPPORT (Est.)		$ 3,373,927

* Additional $3.2 million in federal receipts.
** Additional $2 million in federal receipts.

New York State, based on the above estimates, spends approximately $2.11 for each of the estimated 1.6 million K-12 students who are regular (enrolled) ITV viewers, or $1.02 per student based on the state's total 3.3 million K-12 enrollment. This level of funding represents 0.04% of the state's total public school (K-12) educational budget.

10.0 Comments: New York State's education establishment has historically played a key role in the development of public broadcasting and ITV, from the Board of Regents' early reservation of channels for educational television, to DOE financing for new stations, to SUNY's New York Network. The commitment to localism was also evident from the early days, established by the Regents, who (rather than becoming the licensee for all educational television stations, as State Boards of Education in other states have done) chose to issue charters to local organizations to become the licensees. Local funding for ITV proved to be too unstable. Today, public broadcasting and ITV are well-established in New York, and state support for both is stable.

There are those in New York's educational community who feel that the independent P/ETV stations might be a bit too independent in their treatment of instructional users. It is, however, very likely that the stations' strength, given the availability of ITV funds within DOE's general station support funds, has probably helped stabilize state funding for ITV.

An alternative means of state funding for ITV, channeling funds directly to the local ITV Committees, looks attractive as a means of giving educators purse string control over local ITV services. This route might prove, however, to be much less stable in the long run. If ITV aid were separated from general station support (as it would if going directly to the local ITV Committees), it would lose the "protection" afforded by such association, and would become increasingly vulnerable to budget cuts.

Public broadcasting is well-established in the public's mind and generally accepted as deserving of state support in New York. Its audience contains some of the state's more politically active individuals, not to mention the "philosophical" and financial support

public broadcasting enjoys from major foundations, corporations, and the well-to-do.

The constituency served by ITV (roughly one-third to one-half of the teachers and students, nationally, in states with P/ETV networks), are not so politically effective. Cutting funds for a discreet line item for support to local ITV Committees could be, politically speaking, easy to do. It can be reasonably assumed that the stations and their supporters would resist cuts for ITV services within their budgets, since the stations do have something to gain by providing ITV. This includes the stature attendant to serving the goals of local education; support for increased broadcast hours and programming, both of which enhance the stations' cpportunities for certain types of federal aid; and potentially more efficient utilization or expansion of equipment and staff.

In New York, the issue has become, given stable state support, insuring that the P/ETV stations allocate their fair share of services to ITV in a way that meets the needs of teachers and students, not just the convenience of broadcasters. The general impression the author receives from phone interviews is that New York's P/ETV stations have by and large been fair and the local ITV Committees have been reasonably effective. This is not universal, however, nor is it to say that things could not be better. According to one well-placed DOE official, quarterly reports to the Commissioner of Education have on occasion indicated strong disagreement between ITV Committee members and station ITV Directors on program selections and other services. It is easy to understand that a state Commissioner would be reluctant to involve DOE in a dispute between local ITV Committees and their stations.

The lack of integrated statewide ITV service for higher education is a shortcoming which New York State shares with many others. The 1973 legislative audit specified the following as reasons for the State University of New York's failure to institute such a service:

- Unrealistic goals and lack of understanding of requirements for ITV;
- Fear that ITV would replace faculty;
- Lack of reward system for faculty use and creation of ITV curriculum materials;
- Lack of coordination among and/or commitment by university administrators (SUNY is not a monolithic structure, but is made up of 54 units, each with a fair degree of autonomy).

One DOE official has gone so far as to speculate over the necessity for statewide networking of K-12 ITV, given New York's highly decentralized management system. The single channel distribution network causes local schedule inconveniences which are often overcome by local tape delay at the stations. Since stations make their own programming choices as well (albeit stations have 80% of their ITV programming in common), the ques-

tion is begged as to whether or not stations would be better off taking on the added responsibility (possibly expense as well?) of originating all local ITV programming, in order to do away with the inconvenience of a statewide single-channel schedule. In time the advent of inexpensive and more convenient video discs (when compared to videotape), could further strengthen the argument for stations, or even schools, to maintain their own complete ITV program libraries, thus greatly increasing local schedule flexibility.

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SUNY

Joe Doherty, Director
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SUNY

John Mather, Associate Chancellor
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SUNY

Jerry Bates, Associate
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New York State Department of Education

Ray Graf, Chief
Bureau of Educational Communications
New York State Department of Education

Mike Radlick, Associate
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STATE OF OHIO

Management & Operations

Instructional television in the state of Ohio is primarily based on local public station service to local educators (primarily K-9 programming), with state network ITV feeds, and substantial state financial support for ITV; higher education ITV service is not networked, but the result of local efforts.

Ohio Educational Television Network Commission:
Established by legislative action in 1961, the Commission has eleven members: the state Superintendent of Public Instruction (DOE); Chancellor of the Ohio Board of Regents (higher education); and nine members appointed by the Governor with advice and consent of the state Senate.

Ohio Educational Television Network
Network Operations and Tape Duplication Center in Columbus provides 4-channel ITV and PBS feeds to all public television stations; 19% of all transmissions are ITV; estimated 1.5 million students (or 68% K-12) enrolled in ITV. Locally-licensed stations determine local schedules. Network operational since 1975.

Local Educational Television Foundations
Eight non-profit local foundations (some with local university affiliation) operate 12 public TV stations (and 9 translators). Each station staff includes ITV Coordinator, providing support services to local schools, who pay per/student fee to participate in services, and who sit on station's ITV advisory committee. Station ITV Coordinators serve on Department of Education ITV programming committee, to determine DOE program selections, and network feed schedule. Stations receive direct DOE funding for transmission of ITV, and for utilization services (based on local enrollments).

Ohio Department of Education
State Board of Education, through executive Superintendent of Public Instruction, retains authority for DOE's annual budget support for ITV, and final decisions regarding DOE-funded ITV production.

Division of Elementary and Secondary Education
Assistant for Support Services is part-time ITV administrator; DOE provides funding for: transmission feeds to local stations for ITV broadcasts and services, based on student enrollment; equipment grants to stations for school assistance; in-state ITV production by local stations; and ITV program purchases.

continued...

Total DOE ITV support in FY 1978: $2,478,000. All station ITV coordinators advise DOE on program purchase and in-state productions.

ITV Advisory Council consists of 14 members, appointed by state Superintendent, to advise DOE on all aspects of ITV support.

Ohio Board of Regents
Governing body for all state-supported universities and colleges; provides annual funding to three public television stations (with University licensees). Total ITV support in FY 1978: $960,000. Sponsors no statewide higher education ITV; all efforts initiated locally.

STATE OF OHIO

Funding
(Based on FY 1978 Agency Budgets)

CAPITAL INVESTMENT		$ 9,100,000
Network Operations Center & statewide interconnect to all stations		
Annual maintenance, engineering & operations		$ 1,420,255
ANNUAL COST for Instructional Broadcasting:		$ 2,868,248*
Ohio Educational Television Network Commission		
$1,420,255 x .19 (% of ITV network support)		269,848
Ohio Board of Regents		
$960,000 x .19 (% of ITV station support)		182,400
Ohio Department of Education		2,416,000
Division of Elem & Sec Education		
Station grants for ITV support	$ 1,665,000	
Program Acquisition	232,000	
Program Production	319,000	
Equipment grants	200,000	
*Local educational television foundations		undetermined*

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS	ANNUAL COST PER STUDENT
K-12 Public Schools		
Total Enrollment	2.2 million	$ 1.30
Regular Viewers (68%)	1.5 million	$ 1.92
Higher Education	Not available	
Adult Basic Education	Not available	
Continuing Education	Not available	

* State cost total; does not include individual public TV station per/student assessments of local school districts.

III. STATE OF OHIO

1.0 Background: Ohio has a long history of involvement in educational television. WCET, in Cincinatti (activated in 1954), was the first station in the country licensed for educational broadcasting. By 1965, Ohio had more educational television stations on air (eight) than any other state. However, while ETV was flourishing on the individual station basis, the majority of residents in the state were outside the signal range of any of the stations, and were not receiving educational television services.

1.1 History: In 1957, the Ohio Commission on Education Beyond the High School proposed the use of a statewide educational television network to serve the field of adult education. Responding to this idea, the 103rd General Assembly (in 1959) created the Ohio Interim Educational Television Study Commission, charged with the dual responsibility to:

1. Conduct an engineering and feasibility study relative to extending the educational television services (then) available (or obtainable) to all Ohio citizens in or out of school; and
2. Explore with state agencies the possibility of establishing a single statewide interconnection for their shared broadcasting use.

The Interim Commission's report was presented to the 104th Ohio General Assembly on February 15, 1961. As a result of this report, the permanent Ohio Educational Television Network Commission was created that same year, by legislative action.

The Commission's administrative offices were established in the late summer of 1962, with the first meeting held in June, 1963. In the period 1963-69, the main thrust of the Commission and its staff was to implement the basic ETV network plan developed by the Interim Commission (whose plan had been prepared by Jansky and Bailey, also responsible for designing the Indiana Higher Education Telecommunications System). During this implementation period, the focus of the Commission was on: coordinating the needs of Ohio educational television with the FCC and HEW; providing informational services to Ohio citizens on the concept and advantages of establishing a statewide educational television network and developing human resources; and assisting local groups in establishing stations.

The Commission established close ties with the Ohio Department of Education, which had begun funding instructional television; with the University's Board of Regents, in connection with stations licensed to state-assisted universities; and with the educational television stations, which had all been activated by local efforts, and had local licensees.

In 1967, the Ohio legislature made direct appropriation to the Ohio Department of Education (DOE) for the purchase of instructional television courses. That same year, DOE asked the Commission to 'assist in resolving the distribution problem, and the offices of the Network Commission be solicited to give advice, counsel, assistance and liaison with the stations."

At that time, local educational television foundations (station licensees) had been offering in-school instructional television courses, supported by tax dollars from local school boards, for fourteen years. Both the Network Commission and the DOE, however, were relative newcomers to instructional television in the state. Their joint planning to buy (DOE) and distribute (Commission) ITV programs would provide stations and school boards access to a much wider range of materials than had been available to them individually.

In 1968, the Commission moved to make the network a reality, presenting a $12 million request to the legislature, to provide an educational television broadcast signal to virtually all citizens of Ohio with a minimum duplication of the services then provided by the eight ETV stations.

The legislature appropriated $5.6 million for implementing this statewide network expansion, to the Ohio Board of Regents, with the Commission named as the official agency responsible for implementing the plan. This appropriation funded five new transmitters, equipment upgrade, and the Network Operations Center in Columbus.

The stations were interconnected in September of 1975. State appropriations, in addition to federal revenue sharing funds, have helped to establish Ohio's current educational television network of twelve broadcast stations and nine translators, reaching 90% of the state's residents.

1.2 Governing Body: The Ohio Educational Television Network Commission consists of eleven members; nine members are appointed by the Governor, with the advice and consent of the State Senate; one is the state Superintendent of Public Instruction (DOE), and another the Chancellor of the state Board of Regents. The Commission employs an Executive Director who manages activities subject to the policies and directions of the Commission, and who serves as an ex-officio member of the Commission and all committees.

1.3.0 Audiences: The Commission's network serves two audiences, providing instructional television programming for K-9 grade students, and public (general interest) television programming for the general public. A limited number of college level ITV courses have been offered by individual public broadcast stations, but this represents a tiny fraction of total public broadcast time, and college level programming is not networked.

1.3.1 K-12 Audience: An estimated 1.5 million students (K-9) are formally enrolled in the instructional television broadcasts of the network, representing 68% of all K-12 public school students in Ohio.

1.3.2 Higher Education Audience: No estimate is available of the number of students participating in college level broadcasts that may be provided by individual public broadcast stations; these courses are not transmitted by the network.

2.0 Organization:

2.1 Networking: The Ohio Educational Television Network Commission is an independent agency of the state of Ohio. Central network headquarters transmit approximately 25,000 channel-hours of programming over a multi-channel network to the state's 12 public broadcast stations each year; 19% of these transmissions are instructional programs, the remainder general interest programs.

2.2 Organizations with Statewide Purview:

2.2.1 State Department of Education: The state Department of Education (DOE), through legislative mandate to the Ohio Board of Education, is responsible for approving ITV courses made available by the Ohio network for classroom use. In addition to course approval, DOE provides funds for program purchase or lease, utilization services, local equipment purchases, and network transmission costs.

In FY 78, the DOE budgeted a total of $232,000 for program lease; $319,000 for production; $200,000 for equipment; and $1,665,000 in support services to local educational television foundations (see Section 2.3), for a total ITV budget of $2,478,000.

These services are managed, as a part-time responsibility, by DOE's Assistant for Supportive Services in the Division of Elementary and Secondary Education, who reports to the State Superintendent, and who is assisted by two advisory committees. The first, the Instructional Television Program Committee (ITPC), consists of the Instructional Television Coordinators of each of the public stations, and the Executive Director of the Network Commission. (See Section 3.1 for description of ITPC's activities.) The second committee, the Instructional Television Advisory Council (recently restructured) consists of fourteen members, including school district superintendents, teachers, building principals, station managers, and directors; all are appointed by the Superintendent of Public Instruction, for 3-year terms; three staff members from DOE, and the Executive Director of the Commission, also serve on the Council. Council responsibilities include advising DOE on the biennial budget, long-range planning, legislative support, program needs, and overall ITV use.

2.3 Local Organization: In Ohio there are presently twelve public television stations, licensed to eight educational television foundations. Three foundations are community (non-profit) corporations, and operate WYIZ-TV, Cleveland; WCET-TV, Cincinnati; WGTE-TV, Toledo. Two foundations are local consortia; one operates WNEO-TV, Athens and WEAO-TV, Akron; the other consortia foundation operates WPTD-TV, Dayton and WPTO-TV, Oxford. Three foundations are university affiliated: WBGU-TV, Lima-Bowling Green, by Bowling Green State University; WOUB-TV, Athens and WOUC-TV, Cambridge, by Ohio University; WOSU-TV, Columbus and WPBO-TV, Portsmouth, by Ohio State University. (The Ohio Board of Regents provided $960,000 in FY 79 to support these university-affiliated foundations and their stations.)

The foundation/stations provide open broadcast local distribution of instructional programs (in addition to general interest public programming), as well as utilization services to local school districts. Stations receive funding for ITV from two sources:

1) DOE station funding for ITV: DOE provides each station a flat fee for the transmission of ITV programs, and an additional fee for utilization services by stations ($.65 per student for the first 100,000 students, and $.50 for each additional student over 100,000). In FY 79, DOE provided $1,665,000 in this direct aid to foundations/stations for ITV services.

2) School district funding for ITV: The public stations are also paid by participating school districts, at a rate ranging from $.25 to $1.25 per enrolled student; these funds help to support broadcast and utilization services by each station. Each public station has an Instructional Television Coordinator on staff, responsible for providing support services and coordination to member school districts. Local educators sit on local ITV advisory committees, to establish program priorities for each station. These local educational recommendations are the basis for each Coordinator's activities. (As early as 1955, the Ohio state legislature enacted legislation allowing school districts to pay a fee to local educational television foundations for instructional television services, which has provided considerable encouragement for cooperative relationships between the foundations and the local school boards; some inequities evident in this system of local funding are discussed in Section 10.)

3.1 Purchase/Produce Decisions: The Commission produced no programming of its own, but does provide funding for some statewide public affairs programming production by individual stations. The Commission does serve as a statewide liaison for the purchase of programming. All K-12 ITV approved by the Department of Education, is purchased by the Commission for network transmission, with funds supplied by DOE.

According to Commission literature, the DOE is advised on ITV program selection by the Instructional Television Program Committee (described in Section 2.2), consisting of all station ITV Coordinators and the Commission's Executive Director. According to information from a station ITV Coordinator, however, program selection is conducted by the ITV Coordinators, who meet monthly; with the Commission's Executive Director joining these meetings only when invited. Thus, the title ITPC appears to have been dropped, with the ITV Coordinators retaining program selection responsibility.

Each ITV Coordinator meets regularly with teachers and school administrators, keeping in continual contact with the needs of their educational audience. With this input, the ITV Coordinators meet monthly, and identify and screen appropriate programs. If representatives from five of the eight foundations request an ITV series, DOE provides purchase funds; if fewer than five foundations request a series, these foundations may opt to draw on a $4,000 special purchase fund from DOE, or enter into other arrangements to obtain the programs.

If it is determined by the ITV Coordinators that appropriate materials are not available, one or more foundation may develop a bid to produce the materials. Bids are reviewed by the ITV Coordinators, who then make recommendations to DOE.

3.2 Production Procedures: DOE's Assistant for Supportive Services (part-time ITV manager) receives ITV production recommendations from the ITV Coordinators of the individual stations, determines whether a need actually exists (relying on DOE's Instructional Television Advisory Council), reviews the bids from the educational television foundations, and forwards final recommendations to the State Superintendent of Public In-Struction (DOE). With the Superintendent's approval, the approved foundation then produces the program according to bid specifications. The ITV Coordinators work closely with the producing foundation during program production.

DOE's budget for production in FY 79 was $319,000. Of the fifteen new ITV series aired by DOE (via the network) during 1977, four were locally produced, including series on Ohio history and geography.

The majority of the locally produced ITV programs have been created totally with state funding, supplemented by money from the producing educational television foundation. WGTE-Toledo is now in production with a series that has drawn federal LEAA funds, the first such federal support for ITV in Ohio (although public interest programming has received considerable federal support in the state).

3.3 Scheduling Decisions: The individual public broadcast stations are responsible for determining their own broadcast schedules, to meet local school district ITV needs. Each

station develops its schedule in consultation with the local ITV advisory committee of local educators.

The ITV Coordinators then meet to determine network ITV time blocks based on the individual ITV broadcast needs. A compromise network feed schedule is then created, to accomodate as nearly as possible the ITV schedule preferences of each station. Each ITV series is scheduled into weekly time slots for network transmission. Each public station then finalizes its ITV schedule, and manages day-to-day selections from the network feed with the aid of an electronic mail system (see Section 7.0).

4.1 Technology and Service: The Ohio Educational Television Network provides a two-way (video and audio) microwave relay network among all 12 public television stations in the state, and Network Operations Center in Columbus, capable of transmitting eleven separate channels simultaneously. In actual practice, the system regularly utilizes only four channels. Station transmission capability has been used primarily for live, network airing of programs involving multiple locally originating segments.

Several school districts maintain extensive closed circuit systems; the Cleveland School District has a central tape center which distributes to schools by ITFS. The majority of districts receive ITV broadcasts via open broadcast from the local public television station.

The Ohio Network, in FY 78, had 29 full-time employees, and a budget of $1,420,255. Ohio's total capital investment in the network is $9.1 million.

4.2 Implications for Local Scheduling: The Ohio Network provides 7 hours per school day of ITV transmission, usually over four separate video channels. Local broadcast stations are not bound to a single-channel statewide schedule, and can select from among program repeats the broadcast times for any series that are most convenient for local needs.

Teachers relying on open broadcast of ITV by local public stations are limited to the single program channel, which will generally carry each program at least twice per week; access is more of a problem at the secondary level, where classroom schedules are less flexible, although relatively few secondary ITV programs are broadcast by the network, or the stations. Districts with their own closed circuit cable or ITFS systems have considerable additional program availability, and schedule flexibility for the classroom teacher.

5.0 Programming: The majority of the ITV programming on the Ohio Network is pre-recorded, purchased material. In FY 1978, DOE spent $232,000 to lease or purchase programming; 2,729 individual ITV programs were broadcast in 1977-78. In addition, dimension is added to the in-school ITV curriculum with the

inclusion of PBS programming designed for children, as well as adults (Jacques Coustea; Nova, etc).

Locally produced programming has run the gamut of production values. Most in-state production has been done by WVIZ-Cleveland, and several of these series have been sold nationally. Other stations have produced some programming, generally tending to have lower production value. ITV programming is produced in Ohio for subjects that are region-specific, or of unique interest in the state, such as state history and geography.

6.0 Utilization Services: School districts participating (as paying members) in local educational television foundations (station licensees), receive utilization services from the foundations. These services are provided by the ITV Coordinators at each public station, with further funding support from the per pupil grants provided by the DOE (see Section 2.3).

6.1 Print Materials: DOE's per student subsidies to stations include funds for the purchase of print materials for the network's ITV broadcasts. Teacher and/or student guides and other material accompanying each ITV series are distributed by the ITV Coordinators of each public station to participating school districts, as part of the utilization service.

6.2 Reception Equipment and Maintenance: On-site reception equipment for viewing ITV is the responsibility of the school district. Since 1977, DOE has provided special purpose contracts to the eight educational television foundations (public station licensees) to enable them to provide funding assistance to their participating schools for the acquisition of viewing equipment; in FY 78, DOE budgeted $200,000 for these equipment grants.

6.3 Teacher In-Service Training: The Network Commission conducts staff training programs for those who work in or with the educational broadcasting services of the state.

Public station ITV Coordinators, in cooperation with Network Commission staff, conduct in-service teacher training in the utilization of ITV services, supported by both participating school contributions and DOE funding per enrolled pupil.

7.0 Special Services: All program holdings of the Network Commission are on a computerized retrieval system for all public stations. The Silent 700 computer system, with data terminals at each station, prepares a log describing the program feed and record schedule for each minute of the broadcast day. Weekly schedule requests are fed from the individual stations to the Network Operations Center electronically. These station requests are primarily specifications of which individual program in any series (ITV and public) is to be fed to the station during the scheduled time slot allocated for that series.

The Network Commission also operates the Ohio Valley Medical Line, a permanent, totally dedicated microwave link between six hospitals, the WOSH-TV studio and the Network Operations Center. This system is used to upgrade physician skills, providing continuing education and diagnostic assistance to doctors (Originally, the Network Commission coordinated this service as a two-way medical experiment between Columbus and Athens. This project proved so successful that the Appalachian Regional Commission provided a $670,000 grant to extend it to four more sites. The success of that expansion led the Ohio Board of Regents to provide funding to expand it to its present size.)

8.2 Higher Education Users: Although universities in Ohio were involved in the development of educational television from its beginnings in the state, no ITV beyond the secondary level is transmitted by the Ohio Network; in all cases higher educational ITV broadcasts have been a local effort.

Of the few courses that have been offered by broadcast, many are PBS series for which print student study materials have been developed, such as "The Ascent of Man," and "The Adams' Chronicles." In most cases, the station has approached a local university with information about the series; the resulting credit course offering has been based on the available support materials.

Ohio University has recently made some efforts to become more actively involved in production of ITV for higher education. They recently produced a series, "Coping with Kids," that was offered free of charge to any university in Ohio (several offered the series as a credit course), and sold for broadcast to the Appalachian Educational Satellite Project for use outside Ohio. This successful effort appears to be the result of a desire to experiment with televised instruction and fortuitous circumstances, and may not necessarily indicate a continuing commitment to more systematic ITV production by the University. Ohio University also has the only higher education correspondence division in the state. The Coordinator of Instructional Materials has used televised materials to supplement these courses, usually using courses developed by and available from the University of California-San Diego.

8.3 Continuing Education Users: The Ohio Valley Medical Line is the only permanently established application of ITV for professional continuing education in the state, now receiving financial support from the Board of Regents (see Section 7.0).

8.5 Adult Basic Education Users: Although the original impetus for creating the Ohio Educational Television Network came from plans to use a network to deliver adult and continuing education via broadcast, no adult basic education courses are transmitted by the Ohio Network. Ohio has no coordinating body for adult education. However, the Board of Regents has recently appointed a Director of Life-Long Learning, and this appointment may lead to more systematic use of televised adult and continuing education.

9.1 K-12 Cost Data: Readily identifiable statewide cost data for ITV is only available for K-12 service (and K-9 ITV programming dominants network offerings). The Ohio Educational Television Network estimates that 19% of its transmissions are instructional programs; therefore, that percentage is used to estimate the amount of all resources allocated to ITV broadcasting. (Cost figures are based on FY 78 agency budgets).

Ohio Educational Television Network Commission		
Total Network Operations:	$1,420,255 x .19 =	$ 269,848
Ohio Board of Regents		
Station Support:	$ 960,000 x .19 =	$ 182,400
Ohio Department of Education		
Station grants for ITV support services:	$1,665,000	
Program Acquisition	232,000	
Program Production	319,000	
Reception Equip. Grants	200,000	
		2,416,000
ESTIMATED ANNUAL EXPENDITURE FOR K-12 ITV:		$ 2,868,248

This amounts to an annual expenditure of $1.92 for each of the 1.5 million students enrolled in ITV, or $1.30 for each of the 2.2 million public school students in the state. This total annual state appropriation for ITV services represents 0.08% of Ohio's $3.6 billion annual (K-12) education budget.

10.0 Comments:

Ohio is a sprawling state where the industrial East meets the agricultural Midwest, the North meets the South. Ohio has long struggled with the problem of creating a sense of community among its citizens of widely varying lifestyles and backgrounds. The Network Commission has sponsored several town meetings, utilizing the network's two-way audio/video capabilities.

Ohio has a strong commitment to education, with more post-secondary institutions than any other state, and most citizens are within easy driving distance of a post-secondary education. This has probably been a strong factor in the lack of systematic development of televised higher education services. However, of equal importance is a factor not uncommon to higher education institutions: professional academic jealousies, and unwillingness of colleges and universities to utilize materials developed by other institutions. Significantly, the majority of the higher education courses that have been offered via local broadcast are of such high production quality that their excellence is non-replicable, but which can only be used economically via open broadcast, for lower level or less specialized courses with large enrollments.

The inter-relationships among the Network Commission, the Department of Education, and the local educational television foundations is a strong one. There is input from educators at all levels of broadcast management. The State Superintendent of Public Instruction is a member of the Network Commission; the Executive Director of the Network Commission and leading state educators serve on the Instructional Television Advisory Council to advise the Department of Education in all aspects of its ITV support and services; the local educational television foundations have educators on their boards, and each public station has a full-time ITV Coordinator to serve member school districts, and who is further advised by a local ITV advisory committee of educators and school administrators; station ITV Coordinators advise the DOE concerning program acquisitions to meet locally expressed educational needs. Through these relationships, Ohio maintains strong local input while also enjoying the advantages (especially economic) of a statewide transmission network.

Early legislation allowing school districts to contribute to the services provided by the local foundations/stations encouraged the close working relationship between local educators and most local stations. However, the system of direct payment by the school districts to the foundations/stations generally permits wealthier districts to expend the funds to receive the support services of the local station, with poorer districts (often those most needing the support services and resource of ITV), in some cases unable to spend the necessary funds to receive the same support. Since matching grants for ITV utilization services come from DOE to the foundations based on student enrollments, smaller (and usually poorer) districts may receive little or no additional support for ITV beyond their own limited budgets.

This inequity is one of the reasons Ohio is currently considering total state (DOE) funding for ITV support services, at the anticipated level of $5 million for FY 80. Total state funding will provide some definitive advantages: all school districts will be able to receive utilization services and equipment grants; the part-time ITV management responsibilities of DOE's Assistant for Supportive Services would be augmented by an additional full-time staff ITV consultant under this proposal. However, questions have been raised about accountability of the state's funding of ITV services. Under the present system, local educational television foundations and station ITV Coordinators have financial incentive to be responsive to the desires of the local school districts, as a result of the local district funding to the station; total state funding (to some) means loss of accountability to local educators. Given the critical central role played by each station's ITV Coordinator in selecting ITV programs and negotiating schedules, this accountability is all the more essential.

It is hoped that the existing mechanism of advisory groups would continue to insure responsiveness to local needs even if financial control by local educators ends, if the state assumes full ITV

utilization service funding. Certainly, Ohio's local educators are very knowledgable regarding ITV, and are used to being involved in the decision-making process, and would be expected to continue to step forward. Should Ohio move to total state funding of ITV, the effectiveness of "informal" controls will be tested, in a situation where formal controls had previously resulted in cooperation and respect.

Television instruction for elementary and secondary school students became more important than ever in the winter of 1977, as a number of schools found it necessary to close their doors, some for several days, others for several weeks, in the face of the severe statewide energy shortages and extreme cold. Although most Ohio public stations maintained their regular in-school ITV schedules for those schools able to stay open, some added special services in cooperation with their local school districts. Also, a number of commercial television stations helped out by providing instructional television to home-bound and isolated students.

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Telephone Interviews:

Ohio Educational Television Network, Columbus, Ohio:

David Fornshell, Executive Director
Janet Tadlock, ITV Coordinator

Ohio Department of Education, Columbus

Stanley L. Fox, Assistant for Supportive Services, Division of Elementary and Secondary Education.

Ohio University, Cambridge

John Strain, Coordinator of Instructional Materials

University of Toledo

Juergen G. Mudrow, Assistant Dean of Continuing Education

WGTE-TV, Toledo

Ann Rudraff, ITV Coordinator

ORANGE COUNTY, CALIFORNIA

Management & Operations

Instructional television in California is very much a local responsibility. Orange County's KOCE-TV has developed extensive instructional programming to a wide audience of learners, with support from local K-12 schools, and from one of the county's Community College districts.

KOCE-TV, Huntington Beach
Public broadcast television station providing one open broadcast UHF channel throughout Orange County. Broadcasts K-12 ITV during school hours; college credit courses from 3:00 - 7:30 pm daily, and weekends; and general interest public programming 7:30 pm to midnight, daily. Produces telecourses in conjunction with higher education advisors. Licensed to Board of Trustees, Coast Community College District.

Telecommunications of Orange County (TOC)
Initiated by KOCE-TV in 1974, as a non-profit user consortium to direct K-12 ITV broadcasts and support services. Board of Directors consists of one representative from each paying school district in county (75¢/student/year membership fee). Staff of 3 provides K-12 school participants with print materials and utilization services & training.

KOCE Foundation
Established by KOCE-TV, with Board of Directors (the only members of Foundation) solicited from civic and business community, to receive funds to support public broadcasting, from all available private sources.

Coastline Community College District (CCCD)
Board of Trustees elected by district residents, responsible for all community college operations within district (one of three community college districts within Orange County). CCCD operates Orange Coast College in Costa Mesa; Golden West College in Huntington Beach, and Coastline Community College.

Coastline Community College (CCC)
Established by CCCD Trustees in 1975, with no permanent campus, to provide credit courses through 193 community learning centers (local public buildings), correspondence (via newspaper), and through telecourse broadcasts over KOCE-TV. Division of Telecourse Design coordinates program selections and productions (video and print materials); Coordinated Instructional Systems Services (CISS) provides extensive student and learning manager (instructor) support. CCCD markets CCC's telecourses nationally.

continued...

ORANGE COUNTY (cont'd)
Management & Operations

State agencies providing support for Orange County instructional broadcasting include the:

California Public Broadcasting Commission, through its general assistance to public television stations (that may air ITV broadcasts);

California Department of Education, providing consulting services to schools, and administering per student reimbursements to districts with formal ITV plans;

State Instructional Television Authority Committee (SITAC), created by legislation in 1974, with members appointed by state Board of Education, to serve as advisors to Board on matters concerning ITV.

ORANGE COUNTY, CALIFORNIA

Funding
(Based on FY 1979 Agency Budgets)

CAPITAL INVESTMENT		$ 4,500,000
Initial station investment	$ 1,250,000	
Expansion (9-year period)	1,500,000	
Equipment	1,750,000	
Annual maintenance, engineering & operations		488,237
ANNUAL COST for Instructional Broadcasting:		$ 1,314,500

	K-12	Higher Education
Telecomm. of Orange County (TOC)	104,000	
Coastline Comm. Coll.		
Div. of Telecourse Design		187,500
CISS		350,000
KOCE-TV		
Broadcast Services	108,000	165,000*
Production Services		400,000*
ITV TOTAL	$ 212,000	1,102,500*

ANNUAL TOTAL COST for Public/Educational Broadcasting:	$ 3,450,000
KOCE-TV Annual Budget	3,400,000
TOC Memberships	50,000

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS	ANNUAL PER STUDENT COSTS
K-12 Public Schools		
Total Enrollment	370,000	$ .57
Regular Viewers (27%)	100,000	$ 2.12
Higher Education	14,000	$ 78.75
Adult Basic Education	No breakout available	
Continuing Education	None	

* estimates only

IV. ORANGE COUNTY, CALIFORNIA

1.0 Background:

State of California: There is no statewide network for educational users of instructional television in California. ITV in that state is very much a local responsibility. California has always prided itself on having one of the nation's finest public education systems, so there was never a perceived need for the state to make radical initiatives in new instructional methods.

The State Department of Education spends $1 to support ITV for every $4 spent by local agencies. Dependence on local funding has resulted in a situation in which larger communities, with generous education budgets and greater enrollments, support some of the nation's better and more financially secure local ITV efforts. Regions with smaller populations suffer from less stable funding and resulting poorer quality ITV service. The irony of this situation is that it is often argued that smaller population areas, with more limited educational resources, stand to benefit most from the delivery of ITV, and that this is a major justification for state involvement in ITV. This may not be such a crucial factor in most of California, however, where well-developed road and communications systems, and a diversified economy have not created the drastic physical and cultural isolation prevalent in much of the rural south at the time many southern state legislatures seriously investigated ITV as an important educational resource.

In 1966 the California legislature passed the Farr-Quimby legislation, an ITV reimbursement program in which school districts receive up to 50¢/student enrolled in ITV (K-12). These monies are delivered at the end of the school year to be applied to the coming year's expenses, and are based on each school district's plans for ITV use. The Department of Education's involvement in ITV is limited to administering these reimbursement funds, consulting school districts and regional ITV organizations concerning system design and programming. The Department has also made some effort, to date unsuccessful, to coordinate local ITV users for group (and thus cheaper) program buys.

In 1974, state legislation (Quimby-Marler) proclaimed the intent to "provide high quality instructional programs on an equitable basis to as many public school pupils as possible within the limitations of available funds." Among other things, this legislation created the State Instructional Television Advisory Committee (SITAC), whose members were to be appointed by the State Board of Education. SITAC completed a 2-1/2 year study of ITV in 1977, and recommended the following:

* Establish a state program fund for acquiring telelessons that meet identified state needs.

* Establish a fund of seed money to pursue outside grants for underwriting ITV production.

* Lease time from PBS to transmit state purchased programming instantaneously by satellite and eliminate tape duplication, shipping costs, and time delays.

* Provide limited matching funds to stimulate and intensify local acquisition of classroom receiving equipment.

* Produce TV series for staff development related to statewide needs and as priorities develop.

* Produce in-service training and parent education materials in cooperation with ITV regions, county superintendents of schools, and institutions of higher education for use on a mass basis through TV/college extension services.

* Identify performance criteria for equipment and establish a statewide procedure for coordinating purchases to realize cost savings.

SITAC estimated that implementation of these recommendations would cost the state 50¢ for every public school student. To date, California has not appropriated funds to carry out these recommendations.

Orange County: The ten regional ITV organizations in California vary in their structure, relationships to local education agencies, and public television stations, and they vary in their effectiveness. KOCE-TV's regional service in Orange County is not necessarily representative of other regional ITV organizations, or institutions of higher learning throughout California.

Orange County is a sprawling community of 88 square miles with a population of 1-1/2 million, most of whom fit into the economic classification of middle and upper-middle class. The county has one of the highest per capita incomes in the nation.

KOCE-TV is a public television station licensed to the Coast Community College District Board of Trustees, and functions as the ITV network for Orange County. (For the purposes of this descriptive model, KOCE-TV will be treated as a county-wide network, rather than just a local public television station.) KOCE-TV coordinates its ITV broadcasts with the support services of Telecommunications of Orange County (TOC) for K-12 audiences, and with Coast Community College (CCC) for post-secondary audiences.

Three community colleges in Orange County make up the Coast Community College District: 1) Orange Coast College; 2) Golden West College; and 3) Coastline Community College (CCC). A "college beyond the campus," CCC has no permanent campus; rather, students and teachers meet in 193 learning centers throughout Orange County. These learning centers are all public or community buildings such

as libraries, community centers, churches, or schools - buildings that are often vacant for large portions of the day, especially evenings and weekends. In most cases, the learning centers are more convenient to CCC students than are the campuses of either Orange Coast College or Golden West College.

1.1 History: Just after World War II, the growth and development which has come to characterize Orange County began in earnest. In 1947, the voters divided the county into three community college service areas. Orange Coast College was soon established in Costa Mesa, in unused Air Corps barracks, quickly growing into new buildings. In 1967, Golden West College opened in Huntington Beach.

In 1970, the Board of Trustees of the Coast Community College District voted to establish a telecommunications center intended to produce audio-visual materials for the district. In 1972, the state legislature acted to make the state's established program of reimbursement to community college districts applicable to coordinated instructional systems, i.e. courses in which students were not in the "immediate physical presence" of their instructor. These available state funds would prove to be an important source of support for ITV in higher education, both in Orange County, and the state.

In that same year, 1972, the Board of Trustees for Coast Community College District was granted a license to operate a new public television station, KOCE-TV, which had evolved out of the telecommunications center established several years previously. Housed in the Huntington Beach campus of Golden West College, the goals stated in the new station's application to the FCC were:

* To develop and broadcast telecourses for the Coast Community College District;

* To make these telecourses available to other local community college districts in California;

* To assist in bringing ITV to Orange County's public schools (K-12);

* To provide programming in the areas of cultural and civic affairs.

While KOCE-TV was preparing to go on the air, most schools in Orange County were capable of receiving K-8 instructional television broadcasts sponsored by the Los Angeles Regional Educational Television Advisory Council (RETAC), and broadcast by public television station KCET and educational station KLCS, licensed to the Los Angeles Unified School District. RETAC had been in business for nearly twenty years and was serving seven well-populated counties in the LA vicinity.

With the advent of KOCE-TV in Orange County, there was now the possibility for an ITV service tailored specifically to serve Orange County's independent school districts, and community colleges.

Beginning in February 1974, KOCE-TV initiated formation of the non-profit Telecommunications of Orange County (TOC), to provide ITV programs, schedules, and support services for ITV K-12 broadcasts over KOCE-TV. While TOC is a smaller organization than RETAC, serving fewer school districts, it reportedly provides a more flexible and comprehensive K-12 service.

In 1974 as well, student enrollments at Orange County's two community colleges were swelling to the point that a third community college was required. The Coast Community College District could not afford the $60 million construction costs of a new campus, and began consideration for the proposal for Coastline Community College as a non-traditional college without a campus.

By early 1975, the Board of Trustees for the District had approved the concept of Coastline Community College; energetic Bernard Luskin was appointed CCC president in May, and CCC was accredited by June. The following month, the new college saturated the 190,000 homes within the district with a catalog/class schedule mailing.

CCC offered, via KOCE-TV, nine television courses. First semester enrollment for all courses (including ITV) totaled 20,000. Enrollment for the entire first year totalled 40,863 students. The first year's operating budget was $3.5 million (including federal funds secured in less than three months), with no capital investment. A total of 850 part-time faculty were recruited to instruct in over 1,200 classes, and 29 complete vocational programs.

CCC utilized programming available from KOCE-TV and other sources, plus an approach to management and student follow-up borrowed en masse (with revisions) from Miami-Dade County Community College in Miami, Florida. The responsibility for telecourse design was moved from KOCE-TV to CCC, where a Division of Telecourse Design was established. Production was still done by KOCE, but it was felt that a comprehensive approach to instructional design was needed, one which included specialists in education, and curriculum and text support materials development, as well as television production. CCC was also given the responsibility to administer all television (and newspaper) courses for the Coast Community College District, through CCC's Coordinated Instructional Systems Service (CISS).

In 1977, the KOCE Foundation was incorporated as a non-profit private corporation to receive funding and other gifts from foundations and corporations whose charters prohibit them from donating to tax-supported entities. Foundation funds provided general support for KOCE-TV's public broadcasting services.

Due to the passage of Proposition 13, the local tax base from which California's community colleges and school districts receive support has been radically altered. At the time of this research, many ITV organizations were unsure of their financial futures. None felt threatened to the point of immediate extinction, but all foresaw possible curtailments of services and the

need to restructure their funding relationships. Much financial information requested for this report was unavailable due to wholesale scuttling of budgets and reallocation of available funds to on-going top priority projects, a process that is still underway. Many organizations are not yet even sure how much money they are operating with this year, where it will go, or where it will come from. Therefore, cost data is based on previous fiscal years, with estimations for FY 79 funding levels.

1.2 Governing Bodies: KOCE-TV is licensed to the Board of Trustees of Coast Community College District. Trustees are elected by residents of the district every four years in a general election, and have responsibility for the overall operation of the three colleges in the district.

The Board of Directors of the KOCE Foundation, which receives ITV funding from a wide variety of private sources, were initially solicited by KOCE management and include prominent civic and business leaders. Membership in the Foundation is limited to this Board, which elects new members as needed.

The non-profit Telecommunications of Orange County (TOC), with responsibilities for K-12 ITV programming and support to KOCE-TV, has a Board of Directors composed of one representative from each of the independent K-12 school districts which belong to the TOC consortium.

1.3 Audience:

KOCE-TV Broadcast Hours by Instructional Audience

Audience	Annual Program Hours	Percentage of Total Hours
K-12 (and GED)	825	22.2%
Higher Education	1260	33.8%
General Public (PBS)	1642	44.1%
TOTAL	3727	100.0%

1.3.1 K-12 Audience: Thirteen school districts in Orange County, with a combined enrollment of 80,000 K-12 students, are paying members of the TOC consortium. TOC estimates that an additional 20,000 students enrolled in non-member school districts within the county also regularly watch KOCE during school hours. The total K-12 public enrollment in Orange County is 370,000, of which TOC estimates it serves 100,000, or 27%.

1.3.2 Higher Education Audience: Coastline Community College reports 4,870 enrollments for credit in KOCE broadcast ITV courses during the spring 1979 semester. Enrollments average 14,000 per year. All community college courses are free to California residents.

1.3.3 Continuing Education Audience: KOCE does not broadcast programming for professionals, teachers or business people wishing to upgrade their skills, other than its regular higher education offerings.

1.3.5 Adult Basic Education Audience: TOC does include the KET/GED series in its ITV schedule. Students enroll through independent school districts, and TOC has no data on the number of adults viewing the series, formally or informally.

2.0 Organization:

2.1 Networking: KOCE-TV provides a single open broadcast television channel for delivering ITV programming within Orange County for both TOC (K-12) and Coastline Community College (higher education).

2.2 Organizations with a Statewide Purview:

2.2.1 State Department of Education: The California Department of Education provides consulting services to Orange County school districts and TOC concerning system design and programming. The DOE also administers the (Farr-Quimby) funds, through which any district may be eligible to receive up to 50¢/student reimbursement based on the district's coming year plan for ITV use. DOE has a full-time ITV staff of three.

2.2.3 State Public Broadcasting Commission: This appointed body provides assistance to individual public television stations to support general broadcasting operations, thus indirectly benefiting ITV operations of those stations serving their respective local ITV agencies.

2.2.4 K-12 Organizations (Orange County): Telecommunications of Orange County (TOC) is a non-profit consortium of participating K-12 school districts within the county. Member districts pay TOC 75¢ per student (with up to 50¢/student reimbursable by the state), for which they receive one voting membership on the TOC Board of Directors, and TOC's full complement of ITV support services. TOC is housed at KOCE-TV and receives a cash subsidy from the station for its services to the schools. This subsidy provides for salaries for three full-time TOC staff, travel, and program duplicating costs. In FY 78, this station subsidy provided $54,000 of TOC's $104,000 operating budget, the remainder being earned through membership fees. While salaries are paid by KOCE-TV, TOC's staff take direction from the TOC Board of Directors, which represent participating school districts.

2.2.5 Higher Education Organizations (Orange County): Coastline Community College has responsibility for the design and administration of all telecourses for the Coast Community College District at large. Credits earned through telecourses are recognized at both campus-based community colleges, as well as by CCC, within the district. Like KOCE-TV, CCC is responsible to the Coast Community College District Board of Trustees.

3.0 Management :

3.1 Purchase/Produce Decisions:

3.1.1 K-12 Purchase/Produce Decisions: Twice yearly, TOC conducts an extensive survey of the county's K-12 teachers to evaluate current and potential ITV programming. One of the annual surveys is conducted through a "preview week" during which the regular ITV schedule is replaced by sample programs from new series. Teachers and students evaluate these offerings. The TOC Board of Directors also previews the new offerings, taking teacher and student evaluations into account, and decides what programs to offer during the next year.

3.1.2 Higher Education Purchase/Produce Decisions: The higher education ITV course selection involves two committees. The first, the Telecourse Research and Design Committee, is composed of the Dean of CCC's Division of Telecourse Design, and Marketing Division representative. and KOCE-TV's Station Manager. This committee surveys available telecourses and presents likely candidates, with recommendations, to the Administrative Committee. The Administrative Committee makes final decisions in selecting telecourses to be purchased, produced, or modified, and is composed of the Chancellor of the Coast Community College District, CCC's President, and KOCE-TV's General Manager.

3.2 Production Procedure :

3.2.1 K-12 Production Procedure: TOC and KOCE are not funded to produce ITV for local K-12 needs. TOC is a participating member of the Agency for Instructional Television's "ThinkAbout" series consortium, and both TOC and KOCE are involved in some aspects of that series production for national syndication.

3.2.2 Higher Education Production Procedure: CCC and KOCE are nationally recognized for their joint efforts at producing some of the best higher education telecourses and associated print materials on the market today. Prime production responsibility rests with CCC's Division of Telecourse Design. The process is a long and detailed one; what follows is only an outline:

When CCC undertakes a telecourse production, a design team is established, including a producer with overall coordinating responsibility, and various specialists: an instructional designer, a producer/director, a publications coordinator, a marketing director, academic consultants, and research assistants. The design team conducts a survey of already existing texts and audio-visual materials to determine commonalities, disparities, and the possibility of including these materials in the telecourse. Once this has been completed, course objectives and major units of study are defined. A preliminary recommendation for telecourse format and style is made. Course objectives and units are further defined, and broken down into lesson objectives. Various texts are evaluated for their applicability to the telecourse outline and quality, and one is selected. Lesson objectives

are translated into specific contents, which are assigned video or print components according to the particular advantages of each medium to the content of the lesson. Required new print material is identified.

The design team then becomes the production team, including the telecourse producer, the producer/director, the instructional designer, academic consultants, with the addition of researchers/scriptwriters, television/film directors, graphic artists, and production crew(s).

Final decisions are then made regarding the specific content of the television portion of the course, and rights to existing visual material or footage are sought. Lesson outlines are converted into scripts, coordinated with the production of print materials for the course. Production of the telecourse commences at KOCE-TV studios.

The print materials production team consists specifically of the telecourse producer, instructional designer, academic consultants, publications coordinator, researchers/writers, and graphic artists. This group first develops any necessary support materials to supplement video and the selected text, to assure compliance with the overall lesson objectives. They then develop a study guide that leads the student viewer through a carefully designed sequence of study, from learning objectives to text to video to sample test questions. A faculty manual and a preview package (promotional) are also developed for other academic institutions. A validation team made up of representatives of all design/production teams periodically checks the progress of each group, to assure commonality of effort and accuracy of all materials.

The ability of Coast Community College District to develop and produce support print materials, not only for its own telecourses but also for national PBS projects, has markedly increased the effectiveness of CCC's telecourses, and has greatly enhanced the district's ability to market these on the national scene. CCC's study guide materials, produced in conjunction with commercial publishers as well as commissioned publications, are gaining increasing national use, and the faculty manuals are becoming national models for other telecourse-producing agencies.

Costs for producing a telecourse can vary from $25,000 to $1 million, depending on the format and content. On occasion CCC need only modify an already existing telecourse or produce new print materials. Funding comes from Coast Community College District, plus a variety of governmental and private sources (the latter two usually providing the larger share). Publishing houses may also underwrite production of a telecourse which utilizes their text, since future telecourse enrollees will be buying that text. The Coast Community College District belongs to the Southern California Consortium for Community College Television, which also sponsors CCC/KOCE-TV telecourse production.

3.3 Scheduling Decisions:

3.3.1 K-12 Scheduling Decisions: TOC takes its Board of Director's approved program list and assembles recommended programs into a K-12 weekly viewing schedule. The Board has final approval on this schedule.

3.3.2 Higher Education Scheduling Decisions: The Administrative Committee makes the final decision for each semester's broadcast schedule, in coordination with other public and commercial television stations that also broadcast CCC telecourses. (See Sections 3.1.2 and 4.1).

4.0 Network Configuration:

4.1 Technology and Service: KOCE is a directional UHF open broadcast television station. While KOCE transmits only one channel of television, KCET (a public television station in Los Angeles) and three commercial television stations (KABC, KCBS, and KNXT, all in Los Angeles), carry repeat open broadcasts of CCC's (not TOC's K-12) telecourses. All four stations can be received in Orange County.

KOCE employs 85 staff and has a FY 79 general operating budget of $3.4 million. Of this amount, $2 million is contributed by Coast Community College District, and the remaining $1.4 million from the KOCE Foundation. The FY 80 budget will be approximately $3.6 million, with the Foundation and the District each providing approximately 50%. The financial goal of KOCE is to maintain an equal level of funding from both sources.

KOCE provides a non-cash contribution to both CCC and TOC by providing free broadcast services. KOCE estimates an overhead and operating cost of $65.50/half-hour program. This provides an approximate yearly KOCE subsidy of $108,000 for TOC, and $165,000 for CCC. (See Sections 1.3 and 9.0).

4.2 Implications for Local Scheduling:

4.2.1 K-12 Implications for Local Scheduling: KOCE is the only outlet for TOC's K-12 ITV programming, thus only one program is available at any given time to all K-12 teachers in Orange County. Most elementary programs are aired three or four times each week, giving most elementary teachers a reasonable amount of flexibility for scheduling classroom use. Elementary programs are aired Mondays-Fridays from 9:30 am to 2:00 pm; secondary level programs are aired five days a week from 2:00 to 3:00 pm.

One-half of the intermediate schools, and all high schools, in the county have media centers or libraries with staff and videotape machines to tape programs off-air for later use by classroom teachers. TOC obtains videotape rights for at least one week following broadcast for all programs on its schedule (except one). For the vast majority of programs, negotiated taping rights are for a full school year of re-use in the classroom.

4.2.2 Higher Education Implications for Local Scheduling: While specific course schedules may vary, as a rule any given program lesson will be aired three or four times during the week. KOCE will broadcast each program no less than twice each week, between the hours of 3:00 to 7:30 pm (a time block devoted seven days a week to CCC courses). In addition, KCET and/or one of three Los Angeles area commercial stations broadcast a repeat of each program during the week. Usually the commercial stations offer rebroadcasts during early morning hours, or Sunday afternoons. All rebroadcasts (regardless of source) are scheduled at different times on different days, to offer a greater viewing variety to students. Video cassette copies of programs in a series are kept at selected learning centers, public libraries, and community college campus libraries, for those who missed or want to review any lesson.

5.0 Programming:

5.1 K-12 Program Purchase/Production: TOC spends $32,000 annually (earned through membership fees) to purchase the rights to series produced by the nation's major ITV producers, other state networks, non-profit consortia, and commercial producers. TOC offers 22 series for elementary and intermediate levels, and 29 series for the secondary level. Secondary series usually run for less than a full semester, so that a given time slot in the schedule will be filled with two or more series during the course of the semester.

5.2 Higher Education Program Purchase/Production: Coastline Community College's Division of Telecourse Design has a full-time staff of nine, plus two contractual employees, and an annual staff budget of $150,000. Costs for producing program (video and/or print) materials vary greatly bewteen projects, with funding supplied from a number of sources. (See Section 3.1.2).

Generally speaking, telecourses for higher education are designed to depend much less upon a teacher to integrate learning activities than are ITV programs intended for K-12 students, the assumption being that adult learners are more self-reliant. However, those institutions enjoying more success with television teaching administer the courses so as to offer the option of teacher contact when the student needs it, and to provide the teacher (or "learning manager" as they are referred to in such courses) a means of tracking student progress and prescribing remedial work or review where necessary. The telecourse package itself, independent of the means in which it is administered, can be described as a body of knowledge, presented in a logical, progressive manner. Different methods - print, audio, video, and personal contact - are utilized according to their various strengths for communicating specific concepts and subject matter.

CCC has played a major role in the development and production of about 50% of the telecourses it uses. For example, the 12 telecourses offered in the spring semester 1979, included the following:

Program Source/Role	Number of Courses
CCC design assistance	1
CCC design and production	5
Southern Cal. Consortium (CCC partial funding)	3
Time-Life, Inc.	1
BBC	1
Dallas County Community College (Texas)	1

In seven years, KOCE has produced 14 telecourses (an average of two per year) with approximately half the cost underwritten by government or corporate contributors. KOCE is unable to provide a yearly figure for telecourse production, as costs vary greatly from year to year, depending upon the specific series produced. The production range has been $25,000 to $1 million. Based on average costs available elsewhere, the author estimates KOCE's annual production costs for higher education telecourses to be $400,000.

The Coast Community College District sells the rights to its telecourses for a flat rate per course, varying from $2,000 to $3,500, depending on the course and tape format, plus an additional per enrolled student fee of $10. These fees are for one semester's use, but renewal rates are lower.

Due to California's policy of reimbursing community colleges for students enrolled in telecourses (see Section 1.1), CCC receives $120/student/semester. With an average of 14,000 television course enrollments, this state reimbursement totals $1,680,000 per year. A portion of these state funds, along with course distribution income, covers telecourse production costs. CCC allows a five-year life to each telecourse, during which time it should recover the CCCD's investment in production.

6.0 Utilization Service:

6.1 K-12 Print Materials: TOC acquires the print materials that accompany each ITV series it purchases, at an annual cost of $10,000. These print materials are distributed to participating teachers through building representatives who coordinate information distribution and retrieval relevant to ITV. Print materials and in-service training are the major "carrots" offered school districts as enticement for joining TOC, and paying support service fees. TOC urges that teacher guides for recurring series be stored in school libraries and re-used in succeeding years, as a means of reducing school costs. About 6,000 guides are distributed per year, in addition to broadcast schedules and newsletters.

6.2 K-12 Reception Equipment and Maintenance: Purchase and maintenance of reception equipment is the responsibility of the school districts. In the vast majority of cases, reception equipment functions well and KOCE-TV's signal is good-to-excellent throughout Orange County.

6.3 K-12 Teacher In-Service Training: TOC has one full-time utilization specialist who conducts parent, community, and teacher ITV workshops and presentations. When a new series is purchased by TOC, the utilization specialist concentrates on individual and group consultations with teachers concerning use of the new series. TOC observes that, with time, building representatives are able to perform more and more utilization services independently, freeing TOC staff to concentrate on serving new teachers and schools.

6.4 Higher Education Utilization: CCC's support services to ITV users focus on providing administrative assistance to "learning managers," and directly to students. These support services are the responsibility of CCC's Division of Coordinated Instructional Systems Services (CISS), within the Office of Instruction.

Seventy percent of CCC's total faculty (including instructors of courses in learning centers) are part-time instructors otherwise employed or self-employed professionals, artists, or craftpersons. The remainder are full-time instructors at the District's two community college campuses, most with light course loads, who teach for CCC in the evenings. The total cost of their yearly salaries is apportioned among the various institutions. Twenty-one faculty at CCC are functioning as "learning managers" for television courses. Their duties require five hours per week per class section of up to 350 viewing students, with an additional hour for each additional 70 students.

CISS estimates that administrative costs average $25/student/semester. With an average of 14,000 enrolled students per year, CCC's administrative utilization costs total approximately $350,000, not including telecourse design and production costs.

Students can register for telecourses in person, or through a convenient mail-in form. Central to the administration of each telecourse is the CISS computerized student tracking and mail contact system. This is a flexible system allowing a learning manager (instructor) to monitor each student's progress and prescribe an individualized regimen of review and follow-up exercises as needed. CISS handles all logistics of running off pre-written letters, semi-weekly computerized prescriptive tests and evaluations, plus any other communications the learning manager needs, collating, addressing and mailing all of these.

A course begins with a pre-written letter to students, introducing the learning manager and course objectives and requirements. Included is a course assignment sheet and a study guide which correlates text assignments to the telelesson syllabus/schedule, also included. Every telecourse manager is available twice weekly, at varying hours, for telephone consultation with students. These hours and phone numbers are included in the introductory letter, along with the time and place for optional in-person review sessions and practice exams. During the semester, the learning manager will compose quizzes from the computer's bank of quiz items. CISS will mail the quizzes to students, grade responses, record them, and

generate a response letter with item-by-item feedback from the multiple choice tests, including explanations for items the student missed and references for review. In addition, the learning manager initiates mail contacts (four to six times per semester) and telephone contacts (unspecified number) regarding the manager's evaluation of class and individual students' progress to date, potential future problem areas, coming events of interest, and assuring students of concern about their individual progress. To exams, a mid-term and a final, are composed by the learning manager and administered in person to students who have choice of time and location. The learning manager assigns a final grade to each student.

7.0 Special Services: Beyond (one-way) television broadcasting, KOCE-TV does not provide additional communications services, nor does TOC. CCC's Coordinated Instructional Services Systems is described in the previous section.

8.0 Other Users: During that portion of the day when KOCE-TV is not broadcasting programming for TOC or CCC (from 7:30 pm until midnight), it airs general interest PBS programming, plus some locally-produced programs.

9.0 Cost Data: (see Section 1.1, pp. 98 last paragraph, and 99)

9.1 K-12 Cost Data: The following table shows the total of Orange County funding for K-12 instructional broadcasting:

Orange County Total FY 79 Budget for K-12 ITV

Telecommunications of Orange County (TOC)*		
Salaries **	$49,000	
Duplicating **	3,000	
Travel **	2,000	
Programming	32,000	
Printing	10,000	
Purchase Print Materials	5,000	
Production	2,000	
Supplies	1,000	
TOC TOTAL		$ 104,000
KOCE-TV Broadcast Services ***		$ 108,000
ORANGE COUNTY ANNUAL COST (K-12)		$ 212,000

* TOC includes its Adult Basic Education offerings as part of its K-12 budget; a more detailed breakout of costs was not available.
** KOCE Cash Subsidy
*** Includes funds from KOCE Foundation

Orange County's total expenditure of $212,000 averages out to $2.12/using student, or 57¢ for each K-12 student enrolled in the county's public schools.

9.2 Higher Education Cost Data: The following estimates of cost are the author's, and are based on information provided by CCC and KOCE-TV:

Orange County Annual Cost of Higher Educational ITV
(Estimated)

Coastline Community College		
Division of Telecourse Design		$ 187,500
Preview Packets	$ 11,700	
Promotional Mailings	7,500	
Faculty Manuals	7,800	
Salaries	150,000	
Contractual	10,500	
CISS Administration & Overhead		350,000
KOCE-TV		565,000
Production Value	400,000	
Broadcast Services Value	165,000	
ORANGE COUNTY ANNUAL COST (Higher Education) (Estimated)		$ 1,102,500

For an average yearly student enrollment of 14,000, Coastline Community College spends $78.75/student/year. (There are undoubtedly other overhead costs which could not be readily isolated by the author.)

10.0 Comments: KOCE-TV has been dedicated, from its inception, to the instructional uses of television. Its affiliation with a county-financed community college district has provided highest policy and administrative level support for this purpose, including direct and indirect subsidies to ITV user groups. Like most other open broadcast networks, KOCE-TV does not program for small, highly specialized instructional audiences.

Coastline Community College has implemented an aggressive outreach program to involve a remarkably large number of people in the process of "life-long learning." CCC's well-organized and creative approach to telecourse design, production, and administration are examples of that outreach. CCC has a businesslike approach to marketing its telecourses nationally. Marketing revenue coupled with state reimbursement for community colleges for telecourse enrollments provides CCC's parent organization, the Coast Community College District, with income to reinvest in production. CCC's dependence on KOCE-TV and other open broadcast stations in the region, its structure as a non-campus-based community college, plus its tendency towards more expensive "production value" telecourses with national appeal, have limited its television courses to those of an introductory level, or more popular craft or "modern living" subjects.

Telecommunications of Orange County is a small organization providing comprehensive, K-12 ITV service. TOC is service-oriented, with straightforward decision-making procedures, as a result of its involving paying educational members within a relatively small service area. Many of TOC's strengths result from the fact that it deals directly with independent school districts and individual teachers.

Perhaps a weakness is that, to date, TOC and Orange County have not worked out a permanent cooperative arrangement for services and funding. Noticeably missing from TOC's K-12 schedule are programs for teacher in-service training, nor are these available through CCC. The addition of such programming with a mechanism for certification and/or college credits for teachers from member school districts would certainly aid Orange County's educational establishment and perhaps provide incentive for more districts to become paying members. This could also serve as the basis for institutionalized, direct Orange County support to TOC.

Proposition 13 notwithstanding, this would also require a restructuring of KOCE's broadcast schedule, which presently begins at 9:30 am. Increased funding for early morning broadcast time would allow for teacher in-service broadcasts without jeopardizing CCC's late afternoon time block, and perhaps even provide additional schedule time for CCC prior to K-12 programming. Another less expensive alternative would be weekend in-service broadcasts.

Not all of the independent school districts in Orange County have joined TOC. Hundreds of teachers in non-member districts use KOCE's open ITV broadcasts. This "pirating" undermines TOC's financial support. Since there is no way to control non-paying use of ITV broadcasts, TOC staff favor direct, guaranteed state support of ITV as both a means to insure TOC's continued existence, and to provide all schools with the full complement of services needed to make effective use of ITV in the classroom. It is the author's observation that 100% direct state support might in time undermine TOC's responsiveness to local schools. A combination of state and local school district support, or a system of channeling state funds via the school districts, seems preferable.

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Telephone interviews with:

Dr. Helen Nespor and Bonnie Oliver
Educational Technology, Department of Education
Sacramento, CA.

Dr. Bernard Luskin, President
Charlan Jelen, CISS
Coastline Community College
Huntington Beach, CA.

JoAnn Eisenbarth, Acting Director
Mark Gorelczenko, ITV Specialist
Telecommunications of Orange County

Don Gerdtz, Station Manager
KOCE-TV
Huntington Beach, CA.

STATE OF MARYLAND

Management & Operations

The Maryland Center for Public Broadcasting is the operations center for a centralized statewide broadcast network simultaneously feeding four P/ETV stations with instructional and public interest programming; production and policy-making are essentially centralized.

Maryland Public Broadcasting Commission
Created in 1966 by legislative action, the Commission has responsibility for state public broadcast networking for public and instructional programming. Eleven members include state Superintendent of Schools and two members designated by state Board of Education; 8 members are appointed by the Governor. The Commission is the licensee for the state's four P/ETV open broadcast stations.

Maryland Center for Public Broadcasting (MCPB):
Begun in 1969 to serve as network headquarters (Owings Mills) for single-channel (simultaneous) program feeds to four P/ETV stations (station signals cover state). Local station preemption of network transmissions possible, infrequently used for local or regional programming. Produces one-third of all programming broadcast on network (both public interest and instructional courses). Telecommunications Office serves as state information clearinghouse, and provides technical consultation. Total staff of 215, with FY 79 budget of $6.5 million. ITV broadcasts represent 36% of total broadcast hours, and 37% of total budget; remainder for public programs.

Maryland Department of Education (DOE):
State Board of Education (Governor-appointed) has responsibility for public school management in state, with 24 independent local school districts, and no centralized or state curriculum. Board retains authority (in MCPB enabling legislation) for ITV programming and scheduling for primary, secondary, and adult education in public schools (during school hours). ITV Advisory Board, with local education members representing all four geographic regions of state, advises state Board on ITV policies.

Division of Instructional Television (Div. ITV)
Headed by Assistant State Supt. of Schools, with 33 employees housed at MCPB. Responsible for scheduling ITV broadcasts; four staff utilization specialists work with local district ITV coordinators (central district administrative staff member) to provide teacher training, promotion, and materials. Staff chair and support thirteen ITV Curriculum Committees, with local district specialists; advise DOE Div. ITV, and initiate in-state ITV productions. DOE Div. ITV employs 33, with total FY 79 budget of $890,719.

continued...

STATE OF MARYLAND
Management & Operations (cont'd)

College of the Air
A nineteen-member consortium of community colleges and universities in Maryland, coordinated by MCPB Division of Developmental Projects, on part-time basis. Provides college level telecourses via broadcast on MCPB network, sold by MCPB on campus-by-campus basis. Participating institutions designate on-campus liaison, and arrange registration, creditation, and student support services.

University of Maryland's University College
Patterned on Open University in England, sponsors broadcast ITV programming as portion of open learning course curriculum.

STATE OF MARYLAND

Funding
(Based on FY 1979 agency budgets)

CAPITAL INVESTMENT (80% state; 20% federal)	$ 6,300,000
Annual maintenance, engineering & operations	$ 2,200,199
ANNUAL COST for Instructional Broadcasting	$ 3,293,023

Instructional Audience	DOE Div. ITV	MCPB Netw.	MCPB Prog/Prod.	Total
K-12	890,719	492,845	966,434	2,349,998
Higher Education		200,218	500,661	700,789
Continuing Education				
Management Trng.		26,402		26,402*
Teacher In-Service		44,004	138,696	182,700
Adult Basic Ed. (GED)		28,602	4,532	33,134*
Total ITV Support	890,719	792,071	1,610,323	3,293,023
Total Public Broadcasting Support (MCPB Budget) (37% ITV; 63% public)		2,200,199	4,334,207	6,534.406

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS	ANNUAL COST PER STUDENT
K-12 Public Schools		
Total Enrollment	800,000	$ 2.94
Regular Viewers (50%)	400,000	$ 5.88
Higher Education	2,200	$ 318.58
Continuing Education		
Management Training	800	$ 33.00**
Teacher In-Service	Undetermined	
Adult Basic Education (GED)	8,000***	$ 4.14***

* Does not include support and/or production costs of sponsoring agency, or local education authorities student support services.
** Paid through student tuition fees.
***Estimated enrollment since start of ITV broadcasts; multi-year.

V. STATE OF MARYLAND

1.0 Background: Maryland is a small affluent state with two major urban areas, smaller satellite cities and "bedroom" communities serving these and Washington, D.C. The rest of the state is primarily either rural farming or maritime communities. Generally speaking, Maryland's public school system had not suffered from the privations common in many other southern states at the time of the advent of ITV. With the exception of one or two early demonstrations, the push for ITV in Maryland was primarily associated with the national movement for public television, rather than with a local "educational crisis." Thus, as the general notion of publicly owned and operated broadcasting gained acceptance, statewide instructional programming was an additional service such local broadcasters could offer, and further justification for state support for public broadcasting.

For these reasons, ITV development in Maryland was largely a statewide phenomenon, taking place parallel to the advent of the state's public television network, in the late 1960's and early '70's. Due to the fact that there were no established local educational broadcasters throughout Maryland, the resulting network and relationships between agencies does not reflect the concern of existing local broadcasters to protect their autonomy (as was evident in the Northeast, for example). Similarly, since there was no perceived educational emergency in the public school system, there was no reason for the proponents of statewide ITV to bypass local education authorities.

The Maryland Center for Public Broadcasting is the operations center for a centralized statewide distribution network simultaneously feeding four open broadcast UHF public television stations. While the network's distribution technology and production efforts are centralized, ITV policy-making is not. Local (K-12) educators participate in ITV policy on the statewide level, through advisory bodies, rather than dealing directly as advisors to local broadcasters. Also, the various components of a comprehensive ITV service are delivered through the combined efforts of several institutions. The Center has sections which coordinate services for several specific learner audiences, or which work closely with an outside agency representing a learner audience. Generally speaking, the Maryland Center has developed well-defined, formal relationships with various constituencies, and has actively sought to serve as many instructional audiences as possible.

1.1 History: In 1956, Maryland was the location of a pioneering application of classroom instructional television, the closed-circuit (CCTV) system in Hagarstown. Hagarstown was one Maryland community where there was a definite shortage of qualified teachers (20% had only emergency certificates), especially in such areas as the arts and foreign languages. The project was funded by the Ford Foundation, AT&T, and the Electronic Industries Association as a demonstration of the new technology.

Initially, most of the programming sent out over the six-channel system to Washington County schools was live from the system's six studios. The "TV teachers" essentially supplanted the classroom teacher for the duration of the ITV lesson, and the one-time only availability of each program required classroom teachers to alter their schedules to suit the broadcasts. Later, with the advent of videotape recorders and pre-produced instructional programming, the system began to function more at the discretion of the classroom teacher. The success of this experimental system made instructional television credible in Maryland.

It is clear that from the very outset, the Maryland legislature intended state supported ITV to function on a statewide rather than local basis, with centralized production and distribution, as well as a clear definition of the state Board of Education's authority over ITV programming (in a state with no mandated statewide K-12 curriculum).

In 1966, the Maryland Public Broadcasting Act established the Maryland Public Broadcasting Commission and enumerated its powers, one of which was to operate a statewide broadcasting network. In 1969, the Maryland Center for Public Broadcasting (in Owings Mills) began operating as the Maryland network headquarters and production facility. In the same year, the state's first public television station, WMPB-Baltimore, began broadcasting. Today, four UHF public stations provide public broadcast coverage to the state.

1.2 Governing Body: The Maryland Public Broadcasting Commission consists of eleven persons appointed by the Governor for staggered five-year terms. The Commission reports yearly to the Governor. The enabling legislation for the Commission specifies that appointees are to be broadly representative of the population of the state, and include some people familiar with broadcasting, the arts, libraries, and education. One member shall be the state Superintendent of Schools, and two other members are designated by the state Board of Education.

The Commission's enabling legislation also makes a definitive separation of responsibility for broadcast program content. The state Board of Education is responsible for all instructional programming intended to supplement primary, secondary, and adult education in the public schools, and is to have priority for scheduling during school hours. The Commission is responsible for programming for the general public (non-school hours). Thus, the authority of educators over instructional TV's content and delivery was established by statute in Maryland.

The state Board of Education has designees on the Commission, and is empowered to budget for ITV programming and utilization through the Maryland Department of Education (DOE). Local educators participate on a statewide ITV Advisory Board, as well as on thirteen ITV Curriculum Committees, to identify local educational needs for instructional broadcasts (see Section 3.0 for further description of these advisory groups and their role in decision-making).

1.3 Audiences: The following is the Maryland Center's estimated breakdown of annual network broadcast hours for each learner audience:

Program Audience	Annual ITV Programming Hours	% of Total
K-12	1130	22.4%
Higher Education	540	9.1%
Continuing Education	195	3.2%
Adult Basic Ed. (GED)	70	1.3%
General Education (general home viewing)	3800	64.0%
TOTAL	5935	100.0%

1.3.1 K-12 Audience: The best available estimates indicate that 400,000 K-12 students, or 50% of the state's total 800,000 K-12 enrollment, regularly watch ITV in their classrooms.

1.3.2 Higher Education Audience: The Maryland Center broadcasts telecourses for the College of the Air, a cooperative venture involving nineteen Maryland colleges, and the Center. Yearly enrollments for college credit average around 1,000 students. In addition, the University of Maryland's University College, an open learning project, broadcasts some material for many of its courses via the Maryland network, reaching an additional 1,200 students per year.

1.3.3 Continuing Education Audience: The Center provides a management training service, in conjunction with numerous businesses and agencies in the state. It is estimated that 800 people take these courses yearly. The Center also broadcasts 8 in-service training courses for the Maryland DOE yearly, four of which are for teacher certification.

1.3.4 State Agency Audience: (see Section 1.3.3, above)

1.3.5 Adult Basic Education Audience: The Center broadcasts the GED (General Equivalency Diploma) test preparation course produced by Kentucky Educational Television. Due to the highly decentralized nature of GED home study, and the numerous local agencies involved in working with students, the Maryland DOE cannot provide reliable data on numbers of GED students regularly using ITV. (KET has estimated that as many as 8,000 Maryland students have used the series in a year.)

2.0 Organization: (The following section describes the Maryland Center's services to the K-12 audience; details of services to other learner audiences are in Section 8.0).

2.1 Networking: Production and distribution is provided by the Maryland Center for Public Broadcasting (MCPB) and the four UHF public television stations licensed to MCPB.

2.2 Organizations with Statewide Purview:

2.2.1 Maryland Department of Education (DOE): The state Board of Education has responsibility for MCPB's K-12 and adult ITV curriculum, on behalf of the state's 24 independent public school districts. DOE's Superintendent of Schools, and two other state Board designees, sit as members of the Maryland Public Broadcasting Commission. Within DOE, the Division of Instructional Television (Div. ITV) is headed by an Assistant State Supt. of Schools, with offices housed at the MCPB in Owings Hills. Div. ITV employs 33 people, and had a FY 1979 budget of $890,719.

There are two routes through which local educators can help shape the policies and services of DOE's Div. ITV. The first is through the state ITV Advisory Board. This group is composed of educators from all four geographic regions of the state, and meets directly with the state Board of Education to make long-range policy recommendations concerning ITV program priorities and in-school services. The state Board considers this information in its overall planning process for the total educational needs of Maryland.

Local educators also have input into curriculum decisions made by DOE's Div. ITV through thirteen ITV Curriculum Committees (one for each subject area). These committees are made up of representatives from each of the state's 24 school districts (usually a subject or curriculum specialist in the subject matter). The committees are chaired by a staff member from DOE's Div. ITV, and have additional division staff support.

2.3 Local Organization: Four UHF public broadcast stations (PBS affiliates) receive transmissions from the MCPB, and distribute programs via standard open broadcast transmission to their region's schools, institutions of higher education, and directly to people's homes. All four P/ETV stations are licensed to MCPB. There are no formal structures for local educators' direct involvement with these local stations.

3.0 Management:

3.1 Purchase/Produce Decisions: Since there is no mandated statewide K-12 curriculum, school districts have lattitude in what they teach and how in Maryland. It is the task of the DOE's ITV Curriculum Committees to ensure that the ITV programming carried by the MCPB is relevent to classrooms throughout the state, and that the content is accurate. The Committees screen new series (as available nationally or within the state). In addition, teachers around the state preview sample programs from new series during an on-the-air annual preview week. These teacher evaluations, plus teachers' yearly evaluation of present programming (conducted by DOE), are taken into account by the ITV Curriculum Committees in making decisions about what ITV series to offer, or to develop in-state.

3.2 Production Procedures: When production of an ITV series is recommended by an ITV Curriculum Committee (after previewing

available materials), a production task force is created, including an ITV specialist from DOE's Div. ITV, a curriculum specialist from the appropriate division of DOE, and members of the ITV Curriculum Committee initiating the production recommendation. This task force generates a course outline, and monitors the work of a content specialist/writer, who more fully develops the course, with funding from DOE's Div. ITV.

When this developed content is approved by the initiating ITV Curriculum Committee, an executive producer and a budget are assigned to the project by Div. ITV. Print materials for teachers (a complete series guide, including pre- and post-viewing activities and content bibliography) are developed in coordination with the series scripts, by a teacher on loan from a district to Div. ITV for the entire series development phase (about one year).

Program production is carried out by MCPB, but is limited initially to only one pilot program for the series. The pilot is evaluated by teachers and students, particularly the 75 to 100 "critique teachers" MCPB has identified as especially valuable sources of constructive criticism. All evaluations are considered, and any necessary modifications in the script, production techniques, or print materials are made before series production continues.

3.3 Scheduling Decisions: The ITV schedule is prepared by the Division of ITV at DOE. For its part, Div. ITV feels there is little to be gained by actively involving local educator's in the scheduling process, once program recommendations have been made, primarily due to MCPB's single-channel network.

4.0 Network Configuration:

4.1 Technology and Service: The Maryland network consists of a leased common carrier microwave network which transmits a single channel of television to four regional open broadcast UHF public television stations. Ordinarily, all four stations are slaved to the network headquarters at MCPB. However, all the stations do have their own production and videotape equipment and can pre-empt network feeds for local origination. For the daytime ITV transmissions this is rarely done, but is more common during evening (general public interest programming) viewing hours.

MCPB employs 55 people to traffic programs and operate transmission facilities, and had a FY 79 budget of $2,200,199 for these purposes.

4.2 Implications for Local Scheduling: The dependence on a statewide schedule of network transmissions makes a moot point of the argument for local input into scheduling decisions. No matter what the compromise network schedule, it will prove ill-suited to some users, particularly upper grade level (or other) more specialized instructional audiences. Most ITV programs are repeated three times during any week, although according to Div. ITV, repeat broadcasts do not offer enough flexibility for departmentalized classes.

Off-air recording of ITV programs for later classroom use would give (particularly secondary) teachers more flexibility in scheduling program use. While Div. ITV is not funded to assist school districts purchase viewing or videotape recording equipment, it is assumed that most schools already have at least one VTR. The major problem, according to Div. ITV, is the limited amount of useful secondary level ITV programming that exists.

5.0 Programming: MCPB is a nationally-recognized producer of general interest non-commercial programming, and ITV series. Approximately one-third of all programming carried by the Maryland network was produced at the Center. The FY 79 ITV program breakdown was:

37 leased series
27 Maryland productions:
- 17 instructional series (from 5 to 30 programs each)
- 4 mini-series
- 2 specials
- 3 series of ITV promotional spots (totalling 76)
- 1 series of interludes (from 5 to 15 minutes each)

Many of MCPB's productions are distributed nationally by PBS, or by one of several ITV consortia or vendors. In addition, MCPB has a commitment to programming (both for general interest and ITV audiences) that will emphasize the history, environment, culture, and current events of Maryland.

MCPB's ITV productions include everything from short primary level series, to secondary or post-secondary English and history courses, to teacher in-service training programs. The local P/ETV stations on the network do have some in-house production capabilities, for a limited amount of local public affairs production. All programming intended for transmission on the network (general interest or ITV) is produced at MCPB.

In FY 1979, MCPB employed 160 full-time people at its production facilities, with a total budget of $4,334,227 for production and program acquisition (not including outside funding).

6.0 Utilization: Support to school districts and teachers is the responsibility of DOE's Div. ITV. Utilization staff at the division work directly with local ITV coordinators in each school district for purposes of arranging in-service training workshops and distributing necessary print materials. The local ITV district coordinator is appointed by the district superintendent, and is part of the district's administrative staff (and may have other assigned duties in addition to ITV).

6.1 Print Materials: Teacher guides are provided free of charge to all teachers in the state for the first 4-5 years a series is in use. After that, the cost for the guides must be paid by the

school district (from $1.50 to $2.50 per guide). Program schedules are always provided free of charge. Teachers order print materials through their local ITV district coordinators, who distribute a total of about 100,000 pieces per year, statewide.

6.2 Reception Equipment and Maintenance: School districts are responsible to purchase and maintain their own reception equipment, and videotape recorders. There is no data available on the numbers of sets in the schools, or their condition, but the general impression (of DOE's Div. ITV) is that school districts do provide adequate, reliable equipment for their schools.

6.3 Teacher In-Service Training: DOE's Div. ITV has four professional utilization specialists, who travel the state, generally offering after-school ITV utilization workshops in schools. At one time they also provided longer, more intensive training institutes, for credit, and teachers were paid while in attendance; due to budget cutbacks, these paid institutes had to be eliminated. In some school districts the local ITV coordinators are holding their own institutes at the local level.

7.0 Special Services: The Maryland Center for Public Broadcasting does not provide other regular telecommunications support services to the state's educators. MCPB does contain a Telecommunications Office which serves as a statewide clearinghouse for information on new telecommunications techniques, provides technical consultation to potential users, and participates on behalf of the state in various national organizations. MCPB, through this Office, has played a very active role in demonstrating the applicability of communications satellites for public service, through a variety of teleconferences via satellite.

8.0 Other Users:

8.2 Higher Education Users: MCPB coordinates a joint effort among 19 community colleges and the University of Maryland, which delivers higher education by television. The College of the Air is administered (as a part-time responsibility) by MCPB's Director of the Division of Developmental Projects, who arranges for the broadcast of telecourses, distribution of print materials to, and collection of course fees from participating colleges. The deans of the participating institutions for the College of the Air meet with the MCPB coordinator to review available higher education ITV courses, select those to be used, or propose additional course production by MCPB.

Each of the participating colleges designates an on-campus representative (usually a mid-management administrator), who assumes the part-time responsibility of coordinating matters pertaining to the College of the Air on that campus. Students enroll at one of the participating colleges for the telecourses. That college also provides an instructor to occasionally meet with students (in person or by phone), administer exams, and give a final grade.

Hundreds of students may be simultaneously viewing the same College of the Air course at home, but be enrolled at different institutions, which each provide administrative support and eventually grant course credit. Students usually enroll in a telecourse as part of their regular course program; credits earned through telecourses have full standing toward degree requirements.

The telecourse itself, and associated print materials, are sold to the participating colleges by MCPB, which also provides the statewide broadcast service via the network. The colleges then in turn "resell" the programs to students, through tuition fees. Print materials are purchased at campus book stores.

Participation by colleges in a given telecourse offered by College of the Air is variable. When too few students register for the course with one college, that institution may determine that the low turnout does not warrant the purchase of the course, and cost of the part-time instructor. In such cases, one or more colleges may form a temporary consortium for the particular course. One will administer the course and provide an instructor, for all students statewide; the other consortium participants reimburse the administrating college for a portion of the costs of the course. If a college does not find other institutions willing to share the administrative costs for a telecourse, no credit may be available even though the course is being broadcast by MCPB.

Generally speaking, telecourses for higher education which utilize documentary location filming, graphics, and/or dramatizations must be used by, and earn tuition from, large numbers of students to justify their production cost. These high production value courses are usually for more basic college level courses, which large numbers of students must eventually take (in one form or another) to earn a degree, or for those optional courses for which there is a large popular demand. The more highly specialized and advanced telecourses with smaller enrollment will either be of lower production value (relying on lecture format, with already existing visual material, and a limited amount of specific production) or will be sponsored by a non-college funding source with considerable resources and high interest in a particular content area (see Section 10.0 for further comment).

Telecourses offered by the College of the Air are of the higher production value category, and are leased from the nation's major college telecourse producers: Miami-Dade; Coastline or Dallas County Community Colleges; or MCPB.

The College of the Air offered eight telecourses during the fall 1978 semester. Broadcasts are scheduled in the mornings, prior to the start of the daily K-12 ITV programming, and in the late afternoon or early evening weekdays; and on weekends.

MCPB employs six specialists to oversee design and production of higher education telecourses. Academic consultants are also hired as

needed. Actual production costs vary greatly from series to series, and from year to year, with a major portion of production funds coming from outside sources, including national consortia. A typical series of 30 half-hour programs may cost from $100,000 to $1 million. MCPB's share is included in its annual production budget, and is not available as a separate item (for a single course). Overhead and direct course design expenses total about $50,000 each year. MCPB will usually have one telecourse in design and one in production for the higher education market, which MCPB serves through national distribution.

MCPB also broadcast programming which makes up a portion of the curricula for several courses offered by University College, of the University of Maryland, patterned after Great Britain's Open University. Telecourse broadcasts are just one part of a multi-faceted course curriculum, which also depends much more on group meetings than do most (U.S.-produced) telecourses. An additional 1,200 students enroll in these courses annually (see Section 10.0).

8.3 Continuing Education Users: MCPB administers a "Management Training by TV" service. Eight courses, composed of televised lessons and texts, teach effective management skills. Businesses and governmental agencies regularly use these courses as part of their employee training programs. MCPB staff will generally train one person from the sponsoring (or participating) organization to be a small group leader. Students do the course reading assignments, watch the televised lessons, and meet in groups to discuss the material, and go through "real world" exercises which are part of the curriculum and are directed by the small group leader.

Management training lessons are broadcast on the network at 8:30 am and at 3:00 pm during the week, and it is intended that students watch them in small groups meeting at the place of business. The programs are also available on videotape, for more convenient playback in the place of work. MCPB does not produce these courses. Sale proceeds are divided between the producer of the course, and MCPB, which reports that the fees received from the average annual enrollment of 800 cover the overhead costs for the service. MCPB reports that its present collection of these management courses is nearly outdated, and that suitable replacements are not available. The present enrollment level is stable, but markedly less than several years ago.

The eight teacher in-service courses broadcast on the network were all produced by MCPB for DOE's Div. ITV, and are usually broadcast weekday mornings at 8:00 am, although occasionally a series is aired in the early evening, or on weekends. Four of these teacher training series are marketed nationally. No data is available on the number of enrolled teachers.

8.5 Adult Basic Education Users: DOE's Division of ITV and MCPB purchased rights to the GED series produced by Kentucky Educational

Television, and broadcast this adult basic education course two evenings a week, one weekday morning prior to the daily ITV schedule, and once on weekends. GED students enroll with local education agencies, who provide administrative and personnel support to students studying for their GED test with the ITV series, and award diplomas to students who successfully pass their GED test. There is no reliable data concerning the number of students viewing these GED broadcasts; KET (producer of the series) boasts that 8,000 Maryland students were enrolled at one time. The series cost MCPB $4,532 annually.

9.0 Cost Data: Cost estimates of the dollar value of MCPB's broadcast and programming services to various instructional audiences are based on the percentages of total broadcast time devoted to each audience, with adjustments made for the level of production activity for each. (More complete data on the state's costs per instructional audience was not available from MCPB, since it is difficult to break out salaries and overhead attributable to production for any given audience.)

MCPB's total FY 79 budget was $6,534,406, with $4,334,207 for programming, and $2,200,199 for networking. MCPB devotes 36% of its total broadcast hours to instructional programming, and an estimated 37% of its budget supports ITV. The following estimates may be made for the costs of MCPB service for each instructional audience:

Maryland Public Broadcasting Center FY 1979 Costs
Per Instructional Audience (Estimates)

Instructional Audience	% of MCPB's Total Bdcst Hours	Networking Costs	Program Costs
K-12	22.4%	$ 492,845	$ 966,434
Higher Education	9.1%	200,218	500,661
Cont. Ed. Management Trng.	1.2%	26,402	-0-
Teacher In-Service	2.0%	44,004	138,696
Adult Basic Ed. (GED)	1.3%	28,602	4,532
MCPB ITV TOTAL	36.0%	$ 792,071	$1,610,323

Non-instructional broadcasts account for 64% of MCPB's broadcast time on the network (general interest PBS or general educational programs). The total cost of this public and instructional programming offered by MCPB costs the state approximately $1.45 for each of its estimated 4.5 million residents.

9.1 K-12 Cost Data: More reliable information on Maryland's total financial support for K-12 ITV is available than for most states, due to the existence of a separate Division of ITV, coordinating all of the state Dept. of Education's activities. The following table lists these division costs:

Maryland Department of Education
Division of ITV
FY 1979 Budget

Administration	$ 126,317.61	
Curriculum Prog. Dev.	222,525.00	
Program Utilization	189,255.69	
Production Support	347,020.89	
Overhead	5,000.00	
TOTAL DOE Div. ITV K-12 Support		$ 890,719.19

Maryland Center for Public Broadcasting
Estimated Value of K-12 ITV Support
FY 1979 Budget

Networking ($2,200,199 x 22.4%)	$ 492,845.00	
Programming ($4,334,207 x 22.4%)	$ 966,434.00	
TOTAL MCPB K-12 Support		$1,459,279.00
TOTAL MARYLAND SUPPORT FOR K-12 ITV		$2,349,998.19

This total estimate of $2,349,998 cost in FY 1979 for K-12 ITV support in the state, represents an expenditure of $2.94/student/year for the total K-12 enrollment of 800,000 public school students. A total of 400,000 students (or 50% of total enrollment) are estimated to regularly view ITV programs in class, bringing the state's expense to $5.88/viewer/year. This total K-12 ITV expenditure represents approximately 1.5% of Maryland's FY 79 K-12 public education budget.

9.2 Higher Education Cost Data:

Maryland Center for Public Broadcasting
Estimated Value of Higher Education ITV Services
FY 79 Budget

Design costs for College of the Air	$ 50,000
Networking ($4,334,207 x 9.1%)	450,661
Programming ($2,200,199 x 9.1%)	200,218
TOTAL MCPB SUPPORT FOR HIGHER ED. ITV	$ 700,879

The total average annual enrollment of 2,200 students in College of the Air (1,000) and University College's Open University (1,200) establishes total MCPB cost of $318.58/enrolled student/year.

9.3 Continuing Education Cost Data: MCPB's management training project has no programming costs for the Center, since the pre-produced programs are paid for directly by participating organizations. MCPB does produce teacher in-service training courses for DOE's Div. ITV, with the division's total annual funding of $182,700 (FY 79). Reliable data on total number of viewing teachers is not available.

9.5 Adult Basic Education Cost Data:

Maryland Center for Public Broadcasting
Estimated Value of Adult Basic Ed. (GED) ITV Support (FY 79)

Networking ($4,334,207 x 1.3%)	$ 28,602
Programming (KET/GED series lease)	$ 4,532
TOTAL MCPB SUPPORT FOR GED ITV	$ 33,134

MCPB's annual investment (FY 79) is $33,134 for adult basic education (GED) ITV. This total does not include costs of student support services offered by local education agencies. No reliable data on viewing students is available, although with KET's estimate that the series has had 8,000 viewers in Maryland, MCPB's costs would equal $4.14/viewer.

10.0 Comments: Colleges participating in the College of the Air (Section 8.2) have not reached beyond their student bodies to attract those persons with unique needs that could only be met by television learning, or to attract new students to higher education: people with full-time jobs, the homebound, inexperienced or apprehensive, or the physically disabled or isolated. Rather, most College of the Air students simply find it more convenient to take a telecourse than a traditional course, while taking other courses on campus, or after having previously taken on-campus courses without major difficulty. Most would have eventually taken the same course in the traditional on-campus setting, had it not been available through broadcast, according to information obtained through student surveys.

The College of the Air seems to be under-utilized by Maryland college students (or eligible students). The annual enrollment of about 1,000 students in a state with a population of approximately 4.5 million compares poorly with Coastline Community College's annual enrollment via TV of 12,500 in a service area of one-half million residents (see Network Profile VII. Orange County, CA.). This low enrollment may in part be due to the College of the Air's quasi-federation make-up. Participating colleges are not as active as they might be in promoting utilization of the telecourse option for students. Faculty members have on occasion indicated disappointment with the course materials, and are not directly involved in

series selection.

One means of improving higher education ITV use might be to designate or create one institution with the responsibility to administer all aspects of an ITV service for several colleges, with credits being accepted by all. Direct involvement of faculty representatives in series selection or design, through formal procedures, might result in greater faculty acceptance and increased support from top level administration. Paid memberships in this institution, based on total enrollment at each college, would provide a financial base as well as an incentive for the institution to be service-oriented and encouraging of faculty participation. The cost-effectiveness which member institutions would realize from quality telecourses with consistently high enrollments would provide incentives to other colleges. The faculty benefits might include: reduction of introductory level course loads, class sizes; some form of copyright participation for ITV materials development or contributions; a re-definition of the instructor's role as lecturer to that of learning faciltator and counselor spending more time with individuals or small groups of students; a re-direction of some portion of ITV-generated cost savings into faculty research and scholarship.

Under the present administrative and financial set-up, there is little real incentive for institutions who view themselves primarily as well-defined campuses to go very far out of their way to support off-campus learning. Commitment must come from the college, not broadcasters or producers. The problem is to find an administrative structure that will be centralized enough to provide clear focus of responsibilities, yet insure separate institutions that their respective academic requirements and on-campus autonomy will not be jeopardized through the cooperative ITV effort.

If history is any teacher, the prospects for devising this herein postulated, administratively potent, shared ITV service for higher education, are not bright. Institutional rivalries, protectivism, and resistance by faculty have often frustrated attempts at aggregating colleges and universities in cooperative ITV projects, much more so than for K-12 school districts.

In the context of nationwide use of ITV by higher education, the College of the Air is successful. Certainly those students who have earned credits through it have rated the ITV service convenient, enjoyable, and an effective learning resource. Under the present administrative scheme, it is unlikely that it will serve markedly larger numbers of students, especially those for whom traditional classes are not possible or practical. From the national perspective, the most successful applications of ITV by higher education take place in the following contexts:

Urban community colleges with strong commitments to outreach for lifelong learning, and with close ties to a P/ETV station;

Rural states, where there is a perceived need to decentralize educational resources, and where a state P/ETV network has had historic ties with only one or two higher education institutions.

Consortia appear to work for the collective development of higher education ITV when they are outgrowths of a previously successful association between one institution of higher education, and a P/ETV broadcasting network.

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STATE OF SOUTH CAROLINA

Management & Operations

South Carolina's ETV Network is perhaps the most carefully designed and technically sophisticated state network in the nation, serving extremely varied instructional audiences through combinations of multi-channel and open broadcast transmissions, with two-way audio capability.

South Carolina Educational Television Commission
Established by legislative action in 1960, authorized to operate an educational television network to provide comprehensive educational opportunity for all residents. Fourteen public members are appointed by Governor; ex-officio members include state Superintendent of Schools (DOE), and state House and Senate finance and education committee chairmen.

South Carolina Educational Television Network (SCETV):
Headquartered in Columbia, operates six-channel network integrating microwave, cable, and closed circuits for video and audio transmissions; leased long lines. Licensee for 8 P/ETV and four public radio stations, used for open broadcast of elementary and general ITV. Specialized networks provide secondary, continuing, professional, vocational, and higher educational ITV to numerous sites and institutional closed circuits. Funds all major costs of ITV production for all levels, with some reimbursement by sponsoring agencies; ITV productions marketed nationally. Headquarters for Southern Educational Communications Association (SECA); transmits PBS feeds to P/ETV stations throughout region; coordinates regional ITV program buys. ITV programming constituted 60.7% of all Network channel-hours in FY 1977, with total annual budget of $10,453,375.

South Carolina Department of Education (DOE)
State Board of Education maintains responsibility for ITV K-12 curriculum; established DOE support for ITV in 1969.

Office of Instructional Television and Radio
Coordinates local K-12 educators' involvement in ITV through assistance to eleven regional ITV committees, with individual district representation; and through state ITV Advisory Board, consisting of chairmen of each regional committee and other organization representatives; all Board recommendations submitted for State Board approval. Maintains six regional utilization offices, for assistance to schools upon local administrators' request; sponsors training telecourses for teacher certification credit (3 transmitted in FY 1977). Total FY 1977 budget: $650,000.

continued...

STATE OF SOUTH CAROLINA
Management & Operations (cont'd)

Local Education Agencies (K-12)
Each school district has 4-member delegation on one of the 11 regional ITV committees; each school building has identified ITV coordinator, to assist distribution of scheduling and print materials, and liaison with DOE's regional utilization offices. May participate in operation of regional tape delay centers, established with SCETV equipment funding (and continued supply of tape stock).

Educational Resource Foundation
Established by the state's private business community in 1963-64, to support industrial and vocational training programs using ITV. Funds ITV telecourses for business management, technical job training, and industrial safety.

Other Participating Institutions

University of South Carolina and South Carolina State University are major sponsors of higher education ITV; offer limited at-home (general) and extensive on-campus (specialized) telecourses for enrolled student credit, utilizing both pre-recorded ITV programming and live interactive (one-way video; two-way audio) instruction.

State Board of Technical and Comprehensive Education sponsors vocational ITV training (in conjunction with Educational Resource Foundation).

Medical University of South Carolina, South Carolina Pharmaceutical Association, and the state Department of Social Services cooperatively sponsor health professional training (8-1/2 hours per week in FY 1977), utilizing network interconnections among 29 hospitals and clinics in the state.

South Carolina State Police and local law enforcement agencies involve 3,500 law enforcement professionals in monthly ITV training sessions.

State Department of Labor sponsors regular program series on job seeking skills, and job openings in the state (for minority audiences).

STATE OF SOUTH CAROLINA

Funding
(Based on FY 1977 agency budgets)

CAPITAL INVESTMENT	$ 15,000,000
Annual maintenance, engineering & operations (SCETV Network, Operations Division)	2,833,831
ANNUAL COST for Instructional Broadcasting:	$ 6,995,198
South Carolina Educational Television Network Commission $10,453,375 x .607 (% of ITV channel-hours)	6,345,198
South Carolina Department of Education Office of Instructional Television & Radio	650,000

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS	ANNUAL PER STUDENT COSTS
K-12 Public Schools		
Total Enrollment	612,000	$ 7.70
Regular Viewers (48%)	295,312	15.95
Higher & Professional Education	22,563	103.70
Teacher Development	5,001	120.82
General Education		
Total state population	2,900,000	3.60 per resident

VI. STATE OF SOUTH CAROLINA

1.0 Background: During the 1950's, considerable attention was focused on the performance of southern educational systems as a result of the famous Brown vs. Board of Education decision which decreed that separate educational facilities for children of different races could not provide equal educational opportunities. Concomitant to the ensuing upheaval brought about by desegregation, several southern states began laying the groundwork for statewide instructional television networks. It has been postulated that some southern educators believed ITV could provide a state-subsidized resource to support a new "separate but equal" system of public schools for blacks and private schools for whites; this debatable assertion will be discussed in Section 10.

Looking at the nation as a whole today, the southeastern United States is the region which has most aggressively implemented state-supported ITV services. Southern networks tend to be more centralized in terms of management and technology than those in the Northeast. For example: In the South, the establishment of statewide networks provided impetus for the creation of local educational broadcast outlets; in the Northeast, local educational broadcasters predated the statewide networks and jealously guarded their autonomy as the networks came into being.

1.1 History: In 1957, the South Carolina General Assembly passed a joint resolution calling for a study of the feasibility of utilizing television as a teaching tool in the state's public schools. The completed study recommended a small scale demonstration project, which was instituted the following year in a high school in Columbia, South Carolina. Total enrollment in the two ITV courses offered was 300. During 1959, the system was expanded to five Columbia area schools, enrolled 1500 students, and was favorably received by teachers and administrators.

John Cauthern, a magnate of the textile industry in South Carolina, took an early interest in television's potential as an educational medium. He and his son Henry, a TV producer, enlisted the support of several powerful state legislators for the concept of a statewide network. The support and influence of the senior Cauthern would be critical in the early days of the network. His son Henry Cauthern would eventually become Executive Director of the South Carolina Educational Television Network; his vision as a pioneer in the public service applications of television have gained him national recognition, including appointment to the Board of Directors of PBS, and the National Endowment for the Arts.

In 1960, the General Assembly created the South Carolina Educational Television (SCETV) Commission, which was granted authority to operate a network. As part of this expansion of the state's educational television services, the Commission negotiated with Southern Bell for the nation's first reduced tariff rate for educational television longlines transmission. During the next

several years the closed circuit network was extended and course offerings expanded incrementally until all counties in the state were connected. Course enrollments totalled 18,500 in 1963. At this time the closed circuit ETV network reached 155 public high schools, 36 elementary schools, most state college campuses, all University of South Carolina extension centers, five private colleges, two private high schools, and ten hospitals. The network was already providing continuing education to the medical professions, teachers, and state agencies.

During the years 1963 and 1964, South Carolina experienced a period of unprecedented economic growth. The state's business community perceived that not only was it necessary to upgrade the basic education of South Carolinians, but that local people would need additional training in industrial management and the trades if economic growth was to continue. Thus, the private sector formed the Educational Resource Foundation, an organization that would develop and fund management and industrial training courses to be produced and distributed by the SCETV network.

Network growth was funded by direct legislative appropriation and bond issues, and supported by many influential business leaders. During this first phase of implementation and growth, curricula decisions, program design, and production were all carried out by SCETV staff as part of the original centralized plan. Then in 1969 the curricula planning and program design responsibilities of the network's Division of Education were transferred to the South Carolina Department of Education (DOE), which established the office of Instructional Television. This marked the institutionalization of ITV programming within the formal structure of the state's educational system, and brought educational policy makers directly into the ITV curriculum process.

The DOE's formal involvement would also necessarily increase local school districts' influence over ITV, through their established liaisons with DOE. The state's educational policy makers sought more direct control over ITV as a result of rapidly expanding use of ITV in the state during the decade; by 1969 four open broadcast stations had been added to the network, and ITV course enrollments totalled 472,362.

Under the present structure and Henry Cauthern's aggressive leadership, the South Carolina ETV Network has continued to grow, both in physical plant and services offered, into an acknowledged national leader in instructional television. South Carolina has maintained a high level of state investment, spending $8.00/student annually - more per capita than any other state's support of ITV.

1.2 Governing Body: The South Carolina Educational Television Commission consists of 14 members. Included on the Commission as ex-officio members are the State Superintendent of Schools and the chairmen of the two legislative finance and education committees. It was considered important to have key legislators involved in the budget and policy process of the Commission as a means of insuring legislative support for programs. (See Section 10.0 for further comment).

The granting of ex-officio status to the Superintendent of Schools was in keeping with the strong educational mission given the Commission. The remaining members were appointed by the Governor, to represent the general population of the state, knowledgeable in the areas of education, libraries, the arts, and broadcasting.

The General Assembly defined the Commission's primary responsibility to "provide comprehensive educational opportunities for all residents of the state regardless of age, educational level or location." The Commission was to operate a network that would deliver ITV programming to the following prioritized users: K-12 students; teachers; the professions; business and industry; higher education; state and local agencies; and the general public.

Thus it was established definitively in South Carolina that the state-supported network was primarily intended to serve the instructional needs of specific groups. General interest public broadcasting (cultural affairs and current events), while considered educational in the broad sense, clearly were granted secondary status behind the goal of "narrowcasting" for the particular needs of several smaller, well-defined audiences. Thus all aspects of networking, broadcasting, and scheduling would be tailored around the needs of instructional users from the outset.

1.3 Audience: SCETV is noted for the effectiveness with which it serves a wide variety of learner audiences. As many as 125,000 are estimated to have been formally enrolled in any of the higher education, continuing education, adult basic education, technical, or management courses carried via SCETV's network yearly. In 1975, total course enrollments (including K-12 students) were 318,167, or one out of every eight residents in the state. The most recent data available (1977) shows the following breakdown:

CHANNEL HOUR TRANSMISSIONS PER AUDIENCE - 1977
(Multi-Channel Network)

PROGRAM AUDIENCE	PER (TYPICAL) SCHOOL DAY: Channel Hours	Percentage	PERCENTAGE: Annual Total Hours
K-12 Students	46.44	52.8%	42.4%
Teacher Development	4.14	4.8%	3.0%
General Education (Adult Basic Educ., Industry & Business, and State Agencies)	3.00	3.3%	1.6%
Professional & Higher Education	21.35	24.3%	13.7%
ITV SubTotal	74.93	85.2%	60.7%
PBS, Children's	4.55	5.5%	10.2%
PBS, Public & Cult.	7.70	9.2%	28.0%
Misc.	1.22	0.1%	1.1%
Programming TOTAL	88.40	100.0%	100.0%

Formal ITV programming (excluding general interest PBS programming) accounted for 85.2% of channel hours per school day, and 60.7% of the total channel hours in 1977.

Total number of ITV users, estimated by SCETV for 1977:

PROGRAMMING/AUDIENCE	ITV ENROLLMENT
K-12 Students	295,312
Teacher Development	5,001
College Credit	4,063
Medical Professionals	15,000
Business and Industry	65,000
Law Enforcement (monthly)	3,500
Adult Basic Education	19,742
TOTAL	407,618

1.3.1 K-12 Audience: This is the largest single instructional audience served by SCETV. In 1977, 295,312 students were regular viewers of ITV, or 48.3% of the state's total school enrollment of 612,000. A total of 1,545,319 ITV course enrollments indicates that each participating student views an average of 4.5 separate ITV courses (1977). In 1978, the estimated total state school enrollment was down to 603,000, and ITV regular viewers was up to 322,598, or increased to 53.5% of all state public school students. As evidenced from these figures, state enrollment is decreasing, and ITV use is increasing.

1.3.2 Higher Education Audience: The 4,063 students enrolled (1977) formally in higher education credit ITV courses can receive undergraduate credit in a number of subjects, and can complete work for Masters degrees in two subjects: Business Administration, and Science in Engineering. These university level courses are offered via SCETV in conjunction with several colleges and universities in the state. (See Section 8.0).

1.3.3 Continuing Education Audience: Several categories of professionals are provided courses via SCETV for the purposes of upgrading their skills and general knowledge, principally in the fields of medicine (health professionals receive training via a special closed circuit network connecting health centers and hospitals around the state), law enforcement (officials participate in monthly training courses), business and industry (personnel training in management, technical or industrial skills), and teacher training (courses providing certification credits).

1.3.4 State Agency Audiences: Various state agencies utilize ITV for staff training, teleconferences, and workshops. See Section 8.4).

1.3.5 Adult Basic Education: Several school districts offer ABE courses utilizing television materials in addition to traditional classes.

2.0 Organization

2.1 Networking: SCETV helps organizations representing many different learner constituencies determine the best applications of television to their instructional needs, helps to design the programming, and provides production and distribution services.

2.2 Organizations with Statewide Purview:

2.2.1 Department of Education: South Carolina's DOE has responsibility to determine ITV curricula for K-12 students in the state, and does so through its Office of Instructional Television and Radio. The State Board of Education is ultimately responsible for all public instruction, whether by traditional methods, or by ITV broadcast. Local educators are involved in these overall ITV decisions through a series of advisory groups. The first of these is the regional ITV Committee; each school district superintendent appoints one local principal from the primary, intermediate, and secondary levels, plus one ITV building coordinator (each school has one), to form the district's four-member delegation to this regional advisory committee. Eleven such committees exist in the state.

The chairmen of each of the 11 regional ITV committees sit on the state's ITV Advisory Board, as do representatives of other user organizations. DOE's Office of Instructional TV & Radio provides staff support to this state advisory group, receives its recommendations, then makes and implements final decisions.

2.2.2 Higher Education: Several universities and colleges teach courses via SCETV. The most active and consistent users are the University of South Carolina and South Carolina State University. Higher education ITV sponsors work directly with SCETV in determining course needs, scheduling, and other support services. (See Section 8.0).

2.2.3 Other Users: The Educational Resource Fund and several technical education institutes train people in industrial safety, management skills and the trades via the ETV network. The state's Medical and Bar Associations, medical schools, and law schools continue to provide for the continuing education needs of these professional groups.

2.3 Local Organizations: Local P/ETV open broadcast stations, licensed to and operated by the SCETV Commission, receive both ITV and general interest public programming from SCETV.

Organizations active with ITV on the local level include the public schools, numerous college campuses, state offices, police departments, hospitals and clinics - many of which are connected to the SCETV network.

3.0 Management: This section will describe the relationships among local education authorities, South Carolina's Department of Education, and SCETV for the delivery of ITV to K-12 students. The relationships between SCETV and other organizations serving other instructional audiences is described in Section 8.0.

A listing and brief description of the divisions which comprise SCETV will help to illustrate both its operations and its priorities:

Division of Administration and Finance;

Division of Continuing Education: Designs and coordinates ITV programming for all special audiences, working in conjunction with the appropriate sponsoring agency; schedules all statewide closed circuit transmissions, including K-12 and special networks; coordinates general interest, cultural and current events (PBS) programming.

Division of Operations: Does production; operates closed circuits for in-school and at-home programming, plus transmitters; quality control.

Division of Special Services: Technical consultation to user groups relative to reception systems; printing plant operation; planning, operation, and expansion of closed circuit networks for special user groups;

Division of Station Operations: Operates two TV and one radio station which do their own production and origination;

Division of Radio: Program development and production, content and scheduling for four educational radio stations.

3.1 Purchase/Produce Decisions: The regional ITV committees evaluate present ITV programming and services, and formulate recommendations. The regional committee chairmen articulate these to the state ITV Advisory Board, on which they sit. This Board does its own evaluation and arrives at its recommendations to the Department of Education. These recommendations are received by DOE's ITV Curriculum Coordinating Committee, made up of representatives of various divisions within DOE. This Coordinating Committee reviews the Advisory Board's recommendations, and passes these (and suggested modifications) along to the Director of the Office of ITV and Radio (DOE). The Director then reconciles all recommendations with the budget, decides what programming to purchase and, where necessary and feasible, what production to initiate. These decisions are returned to the state ITV Advisory Board, for possible further mutually agreeable modification.

The Director of the Office of ITV and Radio presents the proposed ITV curricula first to the state Superintendent, then to the State Board of Education for final approval. This is routinely granted, provided the state ITV Advisory Board is reasonably pleased with the decisions of the Office of ITV and Radio.

While this Office could make decisions contrary to the recommendations of the state ITV Advisory Board, this rarely happens. This is in part the result of the long-standing working relationship between the two and the added factor of review of program decisions by the state Superintendent and the Board of Education.

3.2 Production Procedures: The DOE's Office of ITV and Radio takes the lead in developing an ITV series or program for production. ITV specialists from the Office work with DOE curricula specialists in the particular subject area to develop a course outline. Scriptwriters are called in after the content has been approved and production proceeds at the studios of SCETV.

Classroom teachers with extensive experience in utilizing ITV are given leave by their school districts (one teacher to a project) to become full-time members of the SCETV production team. They assist in the design of teacher guides (print) as well. The various stages of production are monitored by the Office of ITV and Radio, and educators before production commences.

3.3 Scheduling Decisions: Recommendations concerning scheduling are submitted in much the same manner as those for programming, with the final schedule for SCETV K-12 programming determined by the DOE's Office of ITV and Radio. The particular technology of the SCETV Network (see Section 4.1) offers adequate flexibility for scheduling in-class use (see Section 4.2), and the Network distribution schedule is not a major issue for local educators.

4.0 Network Configuration: While the SCETV Network is known for its quality production, this is a distinction it shares with several other networks. However, SCETV also provides a varied and extensive distribution network, unique among statewide ITV networks. The Network is the result of "system as a whole" thinking, which includes the needs of the classroom teacher as part of that "system." In addition to providing direct network services to residents of South Carolina, SCETV serves as the headquarters for the Southern Educational Communications Association (SECA), an organization of educational television stations from Maryland to Texas. SECA provides a region-wide feed of PBS programming and arranges for cooperative buys of ITV programming, in addition to many other services.

4.1 Technology and Service: The basis of the SCETV Network is a six-channel closed circuit, cable, and microwave network which virtually connects the entire state. This network of leased long lines is used to distribute instructional radio as well as ITV.

Annual charges for leasing the interconnecting long lines cost approximately $2.5 million, and are paid for by SCETV, while the participating organizations purchase and maintain their own reception equipment, and pay local circuit charges. Those organizations having their own closed circuits reimburse SCETV for lease

costs. They do enjoy savings due to SCETV's bulk purchase of lines, plus partial subsidy through free production and networking staff time.

The SCETV Network connects:

252	secondary schools
29	teaching hospitals or clinics
17	technical education facilities (industrial trades)
45	state agencies or institutions
11	college campuses
11	regional tape delay facilities
8	open broadcast P/ETV stations (soon to be 13)

Three of the six closed circuit channels offered by SCETV are reserved during daytime hours for feeds to secondary schools. The remainder are used to feed open broadcast P/ETV stations and other daytime users, such as the colleges and hospitals. The stations (which are licensed to the SCETV Network) are organized into two "mini" networks of 3 and 5 stations, respectively. These are each fed a different daily ITV schedule, comprised of the same programming, but at different times. The open broadcast "networks" are intended to serve elementary school as well as at-home viewers.

In addition to the statewide closed circuit network, many school districts have their own locally scheduled and operated closed circuit systems. Local educational agency's regional tape delay centers make videotape copies of programming transmitted by the network, and can retransmit these over their own local channels, at times more suitable to local teachers. A total of 128 secondary schools are served by three or more of these locally scheduled and operated closed circuit channels, in addition to the three channels received directly from the Network. The plan is for all secondary schools to eventually be served by both the locally scheduled and statewide channels.

All ITV production and network distribution is carried out from the Network's extensively equipped headquarters in Columbia. Local P/ETV stations were not intended to provide ITV production capability for the Network, although modest local production capability has been installed by SCETV at those P/ETV stations without locally available commercial production capability, or where an SCETV production facility could help the Network more economically cover remote events.

Scheduling and traffic control for the SCETV network are handled by a computerized operations center. Leased phone lines provide interactive audio circuits for university, continuing education, and agency instructional use.

The estimated total capital investment in the SCETV network by the state of South Carolina is $15 million.

4.2 Implications for Local Scheduling: This is where SCETV's Network excells in providing a variety of instructional users with scheduling flexibility. The technology of the Network is a mix of distribution modes specifically suited to particular users. The basic distinction is in the Network's multi-channel closed circuit delivery of some programming, combined with the singled channel open broadcast of others.

Multi-channel closed circuits are used to distribute to instructional audiences whose numbers are relatively small, and who are located in relatively few sites, whose meeting times are strictly scheduled, and whose curricula needs are numerous and subject-specific: secondary school classes; higher education; continuing education; and state agencies.

Open broadcast single channel transmission (with repeats) is adequate and more economical for the more numerous elementary school program, which include a large number of general courses and have considerably more lattitude regarding the times during the school day in which they can be used.

4.2.1 Closed Circuit (Multi-channel): The multi-channel closed circuit network increases the likelihood that any ITV program can be delivered through the SCETV Network to a particular group at the time the group is scheduled to meet. Those secondary schools served by locally-scheduled and operated tape delay centers enjoy greater flexibility for using ITV as a result of multi-channel Network feeds, due to the additional channel-hour capacity and program available these systems provide local schools.

The availability of multi-channel distribution networks and local tape delay centers have been shown to increase teacher utilization of ITV. The following table indicates the increase in ITV use in the classroom when multi-channel capacity was added:

Participation in Two Typical Counties	1966-67 Single Channel	1967-68 Multi-Channel	Percent of Increase
Students	2,572	34,307	1133%
Teachers	85	586	489%
Average number of weekly programs used	70	300	228%

When the first six regional tape delay centers began operation, the 27 secondary schools they served showed utilization increases of 335% for students, and 242% for teachers.

4.2.2 Open Broadcast (Single Channel): Elementary teachers receiving ITV via open broadcast public stations are required to shift their classroom schedule to suit the availability of the desired program. Within limits, this is generally acceptable to most elementary teachers.

While the ideal (availability of a program at the exact time a teacher requests or needs it) is rarely possible through an open broadcast system, local tape delay, with subsequent playback over a school building's installed closed circuit system, or on a videotape recorder in the classroom, can provide additional flexibility to make ITV more workable. In-school distribution systems increase the convience of ITV to the teacher, and increase utilization. SCETV conducted a survey of 114 schools with in-school distribution systems, and found that these systems increased ITV utilization by 91% during the first year of installation, 25% the second, and 1% the third year.

When the additional five P/ETV stations planned by the SCETV Network are operating, all elementary schools in the state will be served (with elementary level ITV) by open broadcast. In addition, 80% of all elementary schools will then receive an additional open broadcast signal, from the "mini" networks of the stations. The same programs will be broadcast on each of these open channels, but at different times and days during the week, in effect doubling the likelihood of a given elementary ITV program being aired at a convenient time for teachers.

5.0 Programming: During the early days of SCETV, most ITV programming was of the "talking head" variety. The teacher on the screen, who had been recruited from the state's best classroom teachers, became an employee of SCETV, supplanting the teacher in the classroom for the duration of the television lesson. As the general trend in ITV programming changed nationwide toward more sophisticated or high production values, SCETV's ITV programming did as well. Today, K-12 programming offered by SCETV is of high production value, using considerable on-location or documentary footage, dramatizations, animation, and graphics. SCETV's series depend heavily upon the classroom teacher to integrate the lessons into a curriculum using discussion, texts, and other sources.

During 1978, 105 ITV series (containing 2,809 individual lessons or programs and representing 1,025 hours of instruction) were broadcast by the Network to South Carolina schools. Each of these programs was broadcast a number of times during the year, and provided the most comprehensive ITV schedule offered by any state educational television network in the nation.

5.1 Purchase: Through its membership in SECA, SCETV buys ITV programs from many of the major national producers and distributors. The vast majority of SCETV K-12 ITV offerings have been pre-produced elsewhere.

5.2 Production: All in-state production of K-12 ITV is done at SCETV's Columbia headquarters, in coordination with the DOE's Office of ITV and Radio, and is funded by SCETV. This programming is generally acknowledged to be some of the best ITV on the market, and is distributed nationally. During 1978, SCETV had six K-12 ITV series in production.

6.0 Utilization: The responsibility for providing utilization services is shared by SCETV, DOE's Office of ITV and Radio, and local school districts. The Office of ITV and Radio maintains six regional utilization offices throughout the state, with full-time staff dealing directly with local teachers and administrators. Each school has a building ITV Coordinator, who distributes materials and serves as liaison to the regional utilization offices.

6.1 Print Materials: Print materials accompanying ITV programs are purchased by the Office of ITV and Radio, along with each series. Copies of these print materials, for distribution to teachers and students, are produced by SCETV's Division of Special Services' print shop. These print materials are distributed to all school buildings through assistance from each building's ITV Coordinator.

6.2 Reception Equipment and Maintenance: SCETV pays all charges associated with connecting a school building to the closed circuit transmission network, as well as all long lines lease charges. Local tape delay centers are housed in facilities provided by local education authorities, who also pay for their operation for school convenience. The SCETV Network purchased all equipment for these tape centers, and provides videotape stock on a regular basis.

Reception equipment and in-building distribution systems are paid for and maintained by the organization receiving the programming, as are local circuit charges for transmissions. School districts enjoy a special arrangement whereby SCETV matches each purchase of a TV or radio set with a second set, free; this service costs the Network between $100,000 and $250,000 annually. The Network also provides technical consultation regarding equipment purchases, and in-building distribution system designs.

Convenient access to a properly functioning TV set is always a critical factor in the level of ITV use; a survey by DOE's Office of ITV and Radio revealed an almost direct relationship between the number of available TV sets and the number of students enrolled in ITV on a per school basis:

Available TV Sets Per School	Participating Students
One	246
Six	644
Ten	1,070

6.3 Teacher In-Service Training: The six regional utilization offices of the DOE's Office of ITV and Radio send their staffs to local schools to conduct utilization workshops with teachers, at a district's administrative staff request. The closed circuit network is used to transmit pre-recorded courses on ITV utilization, as well as many other courses for general teacher in-service.

7.0 Special Services: The SCETV Network does provide leased phone circuits connecting the Network headquarters in Columbia, the University of South Carolina studios, and numerous campus and other building sites, to provide participants in many continuing education and higher education programs with two-way audio interaction with a centrally located course instructor during many live course broadcasts (see Section 8.0).

SCETV cooperates with the National Weather Service to broadcast continuous weather information to South Carolinians, as well as emergency weather warnings. The special radio transmitters located at six of the state's P/ETV stations transmit on one of three different frequencies; broadcasts can be received on inexpensive "weather band" receivers or on multiband AM/FM receivers that include the weather frequency.

SCETV has participated in several demonstrations of satellite transmission of educational programming to other state networks. As the cost of leasing a terrestrial multi-channel distribution system increases, SCETV is looking at the potential of communications satellites as an alternative to long lines.

8.0 Other Users:

8.2 Higher Education Users: SCETV's Division of Continuing Education coordinates 69 college credit courses for the University of South Carolina, South Carolina State University, and other institutions. Of these, five are for at-home viewers enrolled at the sponsoring institution, requiring a minimum of student-teacher interaction, with written papers and exams providing the means of evaluating students' off-campus performance.

The remaining 64 higher education courses are for students enrolled at the University of South Carolina only, who must report to a participating center for the closed circuit transmissions which make up the bulk of the course. In addition to providing a live instructor (located at SCETV studios in Columbia, or in the studios of the University of South Carolina), and leased phone lines to permit students at several locations to participate (audio only) during the live instructional broadcast.

These TV instructors can reach a much larger number of students, scattered and at greater distances, than can those employing traditional on-campus techniques. However, their preparation time is usually considerably greater as well. For this reason, the University of South Carolina permits its TV instructors to carry reduced class loads while teaching courses via SCETV. Administration of courses and ITV curriculum planning are the responsibility of the sponsoring university. SCETV provides the production designers, script writers, production facilities, and the distribution network.

Higher education institutions reimburse SCETV for the expenses incurred for this ITV production, including any necessary travel,

printing, graphic materials, etc. Salaries for SCETV production staff, as well as equipment and studio costs, are part of SCETV's budget and are not reimbursed. When several universities have a common need for a particular telecourse, they may form a temporary consortium to pool their resources to support the production.

Many of the students enrolled in these courses hold full-time jobs, or would for other reasons find it inconvenient to travel regularly to the main campus. Many of the telecourses hold 3 or 4 weekend seminars during the semester, for which students do travel to campus for hands-on activities, exams, or to meet with their instructor, to supplement the mediated instruction. Master's degree students can usually complete their degree requirements through this mediated instruction within three years, at a cost of between $2-3,000, while living at home and keeping their full-time jobs.

In 1977, SCETV higher education telecourses had the following enrollments:

Academic Programs	Telecourses	Enrolled Students
General Undergraduate (Open Broadcast)	5	536
Master's Degree:		
Business Administration	17	1,032
Engineering & Science	32	498
Other Business Administration	5	253
College of Education	7	1,217
Mathematics & Computer Science	2	114
Advanced Secondary (Psychology)	1	167
Government and International Relations	1	246
TOTAL	69	4,063

SCETV employs a full-time associate director to coordinate services to and promote expansion of ITV by the state's higher education community.

8.3 Continuing Education Users: Courses are delivered via the closed circuit network, including business management (non-degree), technical job training, and instrustrial safety. These ITV courses are funded, designed, and administered by the Educational Resources Foundation, and the State Board of Technical and Comprehensive Education.

During 1977, 15,000 health professionals participated in 720 medical programs carried over the dedicated closed circuit network (video/audio), connecting 29 hospitals and clinics around the state. An average of 8-1/2 hours of instruction were offered per week during the year, sponsored by the Medical University of South Carolina, the South Carolina Pharmaceutical Association, and the state Department of Social Services.

The SCETV Network also provides staff development services for educators. These transmissions (two-way audio, closed circuit video) cover specific classroom competencies, philosophies of education, and guidance, for certification or university credit. These educational training courses are transmitted on the Network from 3:00 to 4:30 pm, every school day. SCETV and the state Department of Education collaborated to produce 43 individual programs during the 1977-78 school year, to be used in workshops or in-service training; a total of 392 teachers enrolled for teacher certification credit in one of the three telecourses offered by DOE (in addition to the 1,217 enrollments in College of Education-sponsored courses, see above, Section 8.2).

8.4 State Agency Users: The South Carolina State Police and local law enforcement agencies regularly utilize the SCETV Network for professional training. Ninety percent of all police officers in the state have taken training courses via SCETV, and about 3,500 participate monthly.

The state Department of Labor sponsors a regularly scheduled program (open broadcast), "Job Man Caravan," intended primarily for a black audience, and featuring sports and entertainment celebrities to teach job seeking skills. The lively, up-beat programs originate from various locations around the state, and offer listings of job openings around the state. Estimates are that one-third of the show's viewers have applied for the jobs they learned about because of the program, and that one-half of these applicants have been successful.

9.0 Cost Data: The most complete budget and audience data is available for FY 1977, which serves as the basis for this section.

South Carolina Educational Television Network Budget

Administration and Finance	$ 818,791
Continuing Education Division	1,564,780
Special Services Division	4,192,491
Operations Division	2,833,831
Radio Division	242,417
Station Operations Division (two TV, one radio new station)	771,736
Employee Benefits	30,325
TOTAL	$10,453,375

SCETV does not break out its expenditures according to user audiences, so a method of estimating these costs was established, based on the percentage of total yearly channel hours devoted to each instructional audience (see Section 1.3). Where a Division of SCETV serves all audiences, its budget was prorated according to the yearly percentage of channel hours dedicated to that audience, estimating the dollar value of Division services to that audience. For Divisions not serving all audiences, a formula was established, weighting funding to these audiences in accordance to their percentage of total annual channel hours.

The proportion of each Division's budget devoted to each instructional audience was determined determined by the following formula:

$$\frac{\text{\% of annual channel hours devoted to Audience A}}{\text{Sum of total annual channel hours \% of all audiences served by Division}} = \text{\% DA}$$

% DA = percent of Division budget attributed to Audience A

For example, based on data in Section 1.3, the percentage of the Continuing Education Division budget for teacher development courses can be estimated as follows:

3% of SCETV's total annual channel hours were devoted to teacher development ITV courses; 13.7% of total channel hours were for higher education and professional ITV; 1.6% of total annual channel hours were for general education (all within SCETV's Continuing Education Division). This provides a formula of:

$$\frac{3\%}{3\% + 13.7\% + 1.6\%} = .052 \quad \text{or } 5.2\%$$

So that while teacher development courses accounted for 3% of SCETV's total annual channel hours on the Network, according to this estimating formula, teacher development courses accounted for 5.2% of the activities of the Continuing Education Division.

Based on this estimating formula, the following estimates can be made for South Carolina's costs for instructional audiences:

Estimated Percent of Division Budgets, by Audience

	K-12	Teacher Develop.	Higher & Profess.	General Educ.
Total Annual Channel Hours (see Section 1.3)	.424	.03	.137	.016
SCETV Divisions:				
Admin. & Finance	.424	.03	.137	.016
Continuing Education	----	.052	.238	.027
Special Services	.500	.083	.374	.043
Operations				
Salaries	.424	.030	.137	.016
Other	.520	.030	----	.016
Station Operations	.424	.030	.137	.016
Department of Education				
Division of ITV & Radio (Radio excluded)	.934	.066	----	----

With these identified percentages of budget support per instructional audience, a general estimate can then be made of the actual dollar support provided by the state to ITV services for each audience.

9.1 K-12 Cost Data:

Agency Division	Total Budget	Percentage for K-12	Budget Estimate
Administration & Finance	$ 746,345	.424	$ 316,450

The budget estimates that follow are only estimates, and are intended to provide a basis for making general comparisons of the relative support provided for each particular audience served by the SCETV Network. It must also be noted that SCETV does not break out audience size data according to the categories used for this study, necessitating some modification in the format of the remainder of this section.

9.1 K-12 Cost Data:

Agency Division	Total Budget	Percentage for K-12	Budget Estimate
SCETV			
Administration & Finance	$ 818,791	.424	$ 347,167
Special Services	4,192,491	.500	2,096,245
Operations			
Salaries	1,351,135	.424	572,881
Other	1,482,966	.520	771,142
Station Operations	746,345	.424	316,450
SCETV SubTotal			$ 4,103,885
DOE Div. of ITV & Radio	650,000	.934	607,100
TOTAL COST FOR K-12 ITV (Estimate)			$ 4,710,985

For a total public school enrollment of 612,000 (K-12) in South Carolina, the state spends an estimated $7.70 per student annually. (SCETV claims the state spends $8.00 per student annually.)

A total of 295,312 K-12 students (or 48%) were enrolled in ITV formally, bringing the total state expenditure to $15.95 per ITV viewing student; with a total of 1,316,623 course enrollments, the state expense totalled $3.58/enrolled student/course.

The total state expenditure for K-12 ITV represents 0.68% of South Carolina's K-12 public school budget for FY 1977. (SCETV's claim that the state devotes 1.25% of its education budget to educational television is probably the result of comparing the entire SCETV budget with the total state education budgets for K-12 and post-secondary education (not available).

9.2 Higher Education & Professional Education Cost Data: SCETV's total expenditure for higher education and professional education ITV is estimated at $2,339,937 for FY 1977. This educational category includes post-secondary and graduate students, medical professionals, law enforcement officials, and several smaller, less well-defined groups. Within these categories, SCETV reports 22,563 formal enrollments, for an expenditure of $103.70 per enrolled student.

Organizations representing these instructional audiences are responsible for additional costs not included in this estimate, including leasing of dedicated (local) circuits, some costs related to SCETV production, and design and administration of telecourses (see Section 8.2).

9.3 Teacher Development Cost Data:

Agency Division	Total Budget	Percentage for T.D.	Budget Estimate
SCETV			
Administration and Finance	$ 818,791	.030	$ 24,568
Continuing Education	1,564,780	.052	81,369
Special Services	4,192,491	.083	347,976
Operations (Total)	2,833,831	.030	85,014
Station Operations	746,345	.030	22,390
SCETV SubTotal			$ 561,313
DOE Div. of ITV and Radio	650,000	.066	42,900
TOTAL COST FOR TEACHER DEVELOPMENT ITV (Est.)			$ 604,213

With a total of 5,001 teachers formally enrolled in teacher development courses offered by the SCETV Network, the estimated cost per enrolled teacher totals $120.82.

9.4 General Education Cost Data: With an approximate state population of 2,900,000 in FY 1977, South Carolina spent an estimated $3.60 per resident for instructional television services.

10.0 Comments: Some writers have suggested that the early southern efforts for developing instructional television were part of educational strategies aimed at subverting the dictates of Brown vs. Board of Education. According to this line of reasoning, southern educators were looking for a means of delivering educational services to students in yet-to-be-formed private schools or at home, in the eventuality that white students abandoned the integrated public school systems. However, many of the southern ITV demonstration projects which eventually led to statewide service and networking were closed circuit systems delivering ITV to classrooms in established public school buildings. For example, South Carolina's initial ITV demonstration project was a closed circuit system that began operation in 1958. Open broadcast (though probably more expensive during the start-up phase) would have been better suited to any goal of providing educational resources to private schools.

South Carolina did not institute open broadcast ITV services until 1963, by which time integration was already proceeding, albeit with some resistance. It is just as likely that the attention focused on southern school performance, generated by Brown vs. Board of Education, produced evidence that southern students

were generally underachieving, based on national norms. ITV was viewed by many southerners as a means of upgrading teacher skills and providing higher quality and more varied resources to students, especially in the poorer rural areas; its advantage was that ITV could providing these resources for improved education without the trauma of completely dismantling entire local and statewide educational systems.

The legislation which established the South Carolina Educational Television Network specified the primacy of instructional services over broadcasting for the general public, though general interest public broadcast was certainly deemed an appropriate service for the Network. South Carolina's open broadcast P/ETV stations came into existence well after the closed circuit (specialized instructional) network and its policies were established, and the stations were extensions of this existing service network. SCETV pre-dates the national Public Broadcasting Service (and Corporation for Public Broadcasting), and the considerable resources which have since been directed towards cultural, public affairs and informational programming.

For these varied reasons, the formative years of the SCETV Network did not involve conflict between PBS (general) and ITV (specialized audience) broadcasting, which have occurred elsewhere.

Given the lack of pre-existing public broadcasting structure or state support services, South Carolina might have found itself in an ideal situation for establishing a new ITV network, with centralized technology and management combined with policy makers supportive of instructional uses, including both private and state (and political) support; a benevolent despotism of ITV.

The DOE was eventually given direct control over ITV curricula for K-12 audiences, in keeping with the Board of Education's responsibility for all public education, with local educational agencies participating through the regional and state ITV advisory committees. The development of locally scheduled closed circuit channels and tape delay facilities are examples of later decentralization the technology can provide, serving to increase local control and local use of ITV.

Another reason for SCETV's success has been its aggressive outreach to varied instructional users, its willingness to provide tailor-made services to specific groups. SCETV has thus made a recognized contribution toward improving the quality of many public services and private enterprises, all of which result in the general public benefit, translating into continued state support.

The technology of the network directly affects the level of service it can provide, and the flexibility and range of that service. South Carolina has developed what is perhaps the most flexible network in the nation due to its multi-channel capability,

providing simultaneous statewide or local origination, and dedicated circuits for specialized users. A mix of closed circuit and open broadcast local distribution takes full advantage of the unique properties of each system best suited to the particular needs of specialized audiences for formal instruction and home learning.

During 1978, DOE's Office of ITV and Radio conducted an ITV and radio awareness campaign, to focus public attention on the accomplishments of instructional media in South Carolina. This campaign included distribution of promotional print materials, and television and radio programs, carried by SCETV and commercial broadcasters as well. The state's P-TA has been actively involved in monitoring sex and violence in commercial TV children's programming, and as an outgrowth of that concern and the P-TA's long standing support for SCETV, the 1978 annual state convention passed a resolution of formal support for instructional television in South Carolina.

The South Carolina ETV Commission includes ex-officio legislative members: both the finance and education committee chairmen in the state Senate and House of Representatives. While the presence of politicians on the Commission may at first appear to have the deleterious affect of introducing policitical considerations into the Commission's decisions, there is in fact no way to insulate the Commission from political considerations as long as it receives state funding. The possibly disruptive effects of partisan politics were not a consideration in South Carolina in 1960, where legislative committee chairmen serving as ex-officio members of the Commission would ordinarily all be of the same party - Democrats - owing to the historic weakness of the Republican party in the state at that time. Judging by the continued growth of SCETV since that time, it appears that the resurgence of active two-party politics in South Carolina has not resulted in disruption of Commission activities.

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SCETV Network:

Charles Morris, Director, Division of Operations
Robert Wood, Director, Division of Continuing Education

South Carolina Department of Education:

Clyde Green, Director, Office of ITV and Radio
Robert Elton, ITV Specialist

STATE OF KENTUCKY

Management & Operations

"...Kentucky views instructional television as a non-profit business in which we follow standard business practices and measures, and it works."

Kentucky Authority for Educational Television (KAET)
Established in 1962 by legislative action, authorized to provide educational television and support services in the state; the nine-member Authority includes 5 public members appointed by the Governor, and 4 members representing educational institutions (University of Kentucky; Kentucky State University; Department of Education; and state Supt. of Public Instruction (DOE), ex-officio).

Kentucky Educational Television (KET)
Operational responsibility for coordinating public broadcasting network, including ITV program selection, scheduling, utilization with schools, and ITV production projects. Single-channel, daily broadcasts began in 1968; Lexington studio origination, with 15 UHF transmitters (microwave) and six remote translators, providing statewide coverage; programming may also be available through local CATV. Biennial budget total (Fiscal Years 197 -) totalled $12.86 million, with estimated 57% devoted to ITV (all levels).

Kentucky Department of Education (DOE)
State Board of Education is licensee for all KET transmitters and translators, as well as having authority for public school curricula in state. Board contracts with KAET to operate public broadcasting network.

Bureau of Instruction
Provides liaison with KET for ITV program selection and new production; supports KET production budget requests for state funding.

Council on Public Higher Education (CPHE)
Coordinates ITV course offerings, with Management Board consisting of representatives from each college and university participating in ITV course offerings through KET open broadcast. Biennial state budget requests support ITV coordination and programming; student course feeds paid directly to individual sponsoring institution/campus. CPHE became active in 1974.

Kentucky Training and Development Foundation
Formed by industry and government leaders in 1969, to support ITV for continuing professional training.

STATE OF KENTUCKY

Funding
(Based on Biennial FY 1977-78 KET Budget)

CAPITAL INVESTMENT		$ 10,400,000
Annual maintenance, engineering & operations		$ 3,500,000
ANNUAL COST for Instructional Broadcasting		$ 4,250,000
Kentucky Educational Television		
Research & Development	$ 75,000	
Program Acquisition	150,000	
Product Manufacture	950,000	
Product Sales	250,000	
Delivery (Networking)	2,100,000	
Product Services	125,000	
Total KET ITV Support (56.8% of total budget)	$ 3,650,000	
Council on Public Higher Education (CPHE)	$ 600,000	
TOTAL State ITV Support	$ 4,250,000	

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS (FY 77)	ANNUAL COST PER STUDENT
K-12 Public Schools		
Total Enrollment	693,691	$ 4.65
Regular Viewers (51%)	356,363	$ 9.07
Higher Education	1,000	$ 426.00
Adult Basic Education (Enrolled)	4,000	$ 39.00
(Enrolled & informal viewers)	6,000	$ 26.25
Continuing Education	Undetermined	

VII. STATE OF KENTUCKY

1.0 Background: Kentucky Educational Television (KET) is a successful, highly centralized and autonomous public broadcasting network, which excells in producing high quality ITV programming, print materials, and in providing detailed and comprehensive utilization services to K-12 teachers and school districts. According to one criterion, KET can claim to be the nation's most extensive instructional television network, in that its numerous transmitters and translaters make its signal available to the entire state. The variety of instructional services KET offers beyond open broadcast, and the range of user groups it serves, are limited by the statewide network's technology: single-channel open broadcast.

There are historical reasons for KET's particular relationship with Kentucky education and the alternate sources of support which KET has built. In many respects, the political and administrative environment in which KET evolved is unique, and when considering the formidable obstacles this environment presented, it is quite remarkable that KET exists. Many Kentuckians were involved, but the central figure and guiding light has always been KET's present Executive Director, O. Leonard Press. The specific obstacles, and the strategies employed to overcome them in Kentucky, serve to illustrate that political acumen, outreach, and effective public relations play a necessary part in advocating a statewide support system for the use of instructional television (see Section 10.0).

The Constitution of the Commonwealth of Kentucky and the relationships within state government that resulted are very much a reflection of the conservative approach to government in the state's early agrarian society. Some have argued that the state's Constitution was designed to inhibit the activities of a statewide government; the General Assembly (legislature) meets every two years, and for this and other reasons, traditionally functions in a "reactive" manner to the legislative initiatives of the Governor. Kentucky's Governor, by state law, is one of the most powerful state chief executives in the nation, but is constitutionally prohibited from successive terms in office, and continuity of programs and philosophies may consequently suffer.

The Superintendent of Public Instruction (state Department of Education) is elected by popular vote every four years, and is also prohibited from holding this office for more than one term, successively. The Superintendent need not be of the same political party or share the same educational philosophy as the Governor.

Kentucky has traditionally taken a very conservative approach to taxation, with office-seekers often campaigning on a platform stressing the need to reduce or eliminate taxes. These factors have created an unstable funding and policy environment, in which local educators have learned to survive through a variety of political relationships, both within the educational community, and outside it. In common with many other southern states, Kentucky's

public education system has traditionally suffered from general under-funding, and a scarcity of qualified teachers and support services in its more isolated rural communities. During the 1950's and 1960's, some Kentuckians, aware of developments in neighboring Ohio and South Carolina, proposed that instructional television could help alleviate short-term educational needs, and provide the basis for long-term upgrading of public education in the state. It would prove to be a long process.

1.1 History: In 1958, O. Leonard Press (then head of the Radio, TV and Film Department of the University of Kentucky), and Ron Stewart (a radio engineer) set out to popularize the concent of an educational television network for Kentucky. Prior to this time, Jefferson County (Louisville) had conducted a successful closed-circuit ITV demonstration funded by the Ford Foundation. As one result, the Jefferson County School Board established its use of ITV open broadcasts from Ohio. Press sought to capitalize on these experiences, and together with several respected educators and business leaders, won the support of two influential legislators. A resolution of the General Assembly in 1960 directed the Legislative Research Commission to conduct an in-depth feasibility study of a Kentucky educational television network.

The Commission released its study in 1961, concluding that not only was a network feasible, but desirable as well. The report cited benefits to (especially rural) students, and the potential for closed and open circuit course offerings for higher education, and continuing education for professionals. Special emphasis was given to the utility of such a network for upgrading the skills of Kentucky's teachers. The Legislative Research Commission then appointed an Advisory Committee on Educational Television "to assure close analysis of the policy implications of the factual study." In fact, it was intended that the Advisory Committee publicize the findings of the Legislative Research Commission's feasibility study, and gather political support for a network. The Advisory Committee established regional councils to make contacts in all parts of the state, to organize support for educational television.

The Advisory Committee consisted of members representing business, organized labor, legislators, and the general public. Noticeably absent were representatives of the state Department of Education, or the state's universities. This appears not to have been a mistake of omission. Rather, Press and the others who had been active up to this point, feared that the politics of the Department of Education, coupled with the provincialism of the local education establishment, would hinder, not help, the effort. It was not until such time as public support was manifesting itself and concrete proposals were being made to the Governor that the formal educational institutions of the state were included in the planning process. This established the early strategy, still in effect today, of securing a broad constituency for educational television among the state's general public and specific influential politicians, businessmen, labor leaders, etc. Press would

work indirectly, through the influence of key people, to implement educational television during the terms of three successive governors who were uncommitted to the concept. Given the politics of education in Kentucky, this may have been the only path to follow.

During 1961 and '62, the Advisory Committee on Educational Television conducted a statewide campaign aimed at educating the public about educational television. Articles on the subject began appearing regularly in the state's newspapers, and members of the Committee made personal appearances on TV and radio talk shows. Numerous presentations were made to P-TA's, civic clubs, and chambers of commerce. Local educators were persuaded to write personal letters of support for the concept, though getting their statewide organizations to officially advocate ITV development was something else. Between 1958 and 1962, Kentucky's awareness of the instructional possibilities of television grew rapidly, with increasing public calls for action. The key to action, of course, was funding.

The general principle by which a statewide network eventually came into being in Kentucky has been referred to as "political bookeeping." Under this theory, chief executives who find themselves with scarce resources and pressures to fund new programs, may eventually take the politically expedient route of authorizing the program but leaving the funding to their successors. Thus, Governor Combs supported legislation in 1962 which established the Kentucky Authority for Educational Television (KAET), and granted it the power to plan for and operate Kentucky Educational Television (KET) as the network. Associated legislation authorized the Governor to issue revenue bonds for the capital expense of constructing the necessary facilities, but Governor Combs chose not to issues these at that time.

Issuance of the bonds, payment of the debt service on them, and the operating expenses of the network would be decisions for the next governor. Combs provided KAET with funding to plan the network and, sometime thereafter, left office. KAET thus had formal status from which to continue the advocacy role that had been carried on (informally) by the Advisory Committee. Educational television had continued legislative support, but future funding would require support from the new governor.

Governor Breathitt had campaigned on a promise to reduce taxes, and was loathe to create a new educational television service. He demanded a show of support from the Kentucky Education Association in 1964, and priority ranking of all educational needs, including instructional television. State and Association administrators were unwilling to jeopardize any portion of their existing services in the hopes of achieving greater cost efficiencies or improved service in the future through ITV.

The Governor remained adamant that educators would have to pay for educational television from their own budgets. Given the complexities and rivalries within the state's educational community, there seemed little likelihood that agreement could be reached on an

overall financial plan, even had the resources been available.

Faced with this standstill in 1964, KAET had finished its plan for the statewide educational television network, but had no funds to implement the plan. Other states were actually using portions of this plan in establishing their own new networks. KAET's executive committee continued its aggressive public relations campaign, which resulted in the Governor's receiving a continuous stream of letters from civic leaders statewide, endorsing the statewide educational television plan. A television documentary was produced (by a local TV station), highlighting the delay of the much awaited network.

Paul G. Blazer, the head of the Ashland Oil and Refining Company, one of the state's larger companies, supported educational television. In 1965, he offered to purchase and then donate to the ETV network all sites specified in the KAET network plan as necessary transmitter locations; Blazer would contribute the estimated $30,000 needed, plus legal fees. This gesture received wide coverage in the state's news media, and was intended to provide further pressure on the Governor to take action.

Governor Breathitt's opposition to establishing a state educational television network was based on the economic and political considerations at that time. The lobbying effort of the KAET executive committee, and the increasingly widespread public support for the proposed network, ultimately convinced him of the utility of such a service. Thus, in 1966 as he prepared his second (and last) biennial budget request to the General Assembly, "political bookkeeping" provided a means of satisfying everyone. Blazer's donation of transmitter sites was accepted by the state, with the Governor's requests for state appropriation in the FY 67-8 budget of $349,000 to construct a network operations center with studios. The Governor further ordered issuance of the long-dormant revenue bonds to raise $7.4 million to equip and construct the network. Debt service on these bonds would not begin until the next governor was in office. Operating costs of the network would also be the new governor's responsibility, when the network was operational in two years.

Thus, when Governor Louis B. Nunn took office in 1968, his first budget automatically contained debt service of approximately one-half million dollars for the soon-to-be-completed network, which had cost a total of several millions (in state and federal money) to establish, and for which the new governor had never been consulted nor voiced support. While Gov. Nunn was initially unenthusiastic about the idea, he was nonetheless a realist, and in September 1968 (six years after KAET had been established), he pressed a button at KET studios in Lexington and 200,000 students in 6,500 classrooms watched his dedication of their new educational television network.

1.2 Governing Body: All broadcasting facilities of the network are licensed to the state Board of Education, which contracts with the independent non-profit entity of the state (Kentucky

Authority for Educational Television: KAET) to operate the educational broadcasting network (Kentucky Educational Television: KET).

The legislation establishing the Authority charges it to "...make available to state supported institutions of higher education in the commonwealth, and to any others who may choose to utilize same, television programs and related services in aid of education, and for incidental use in other proper functions." KAET's policies have always established the priority of serving instructional users, rather that predominantly serving a more general interest public audience.

The nine-member Authority consists of five members appointed by the Governor to represent the general public; a representative of the University of Kentucky; a representative of the State University system; a member of the staff of the Department of Education, selected by the Board of Education upon recommendation of the Superintendent; and the Superintendent of Public Instruction (as an ex-officio member).

When initially established, only three Authority members were to be appointed to represent the general public; the two remaining gubernatorial appointees were to possess expertise in broadcasting or media production. A 1973 study commission, established by the General Assembly to review KET's progress, recommended that the two technically qualified appointees be replaced by persons with more general backgrounds, in order to more adequately represent the public perspective. This recommendation was carried out by amendment to the original enabling legislation (see Section 10 for further comment).

1.3 Audience: Kentucky Educational Television (KET) primarily provides programming for formal K-12 instruction (28.8% of average annual broadcast hours); general K-12 education (20.2%); formal higher education instruction (4%); and formal (2.5%) and informal (6.5%) adult basic education instruction. Instructional program broadcasts account for a total of 62% of KET's broadcast hours; public affairs and other general interest cultural programs account for the remaining 38% of KET's broadcast hours.

KET operates a single-channel open broadcast network, not well-suited to the needs of small instructional audiences with highly specialized instructional needs.

The following table illustrates a typical year's breakdown of broadcast hours, by audience:

KET FY 1977 BROADCAST HOUR DISTRIBUTION

Type of Programming	Broadcast Hours	Percent of Total
K-12 Instruction		
Formal (in-class)	1361.75	28.80
Informal (at-home)	954.50	20.20
Higher Education		
Formal (credit courses)	183.50	4.00
Adult Basic Education		
Formal (enrolled)	120.50	2.50
Informal (not for credit)	307.50	6.50
ITV Program Total	2927.75	62.00
Cultural	1325.75	28.00
Public Affairs	475.25	10.00
KET TOTAL PROGRAMMING	4728.00	100.00

1.3.1 K-12 Audience: The most recent statewide survey (1977) of in-school ITV use of K-12 programming in the state, indicated that 356,363 public school students (or 51%), regularly viewed KET programming in school. Private and parochial school use increased the viewing total to 394,195 students.

1.3.2 Higher Education Audience: While the history of higher education's use of ITV in Kentucky is inconsistent, 10 to 12 courses are generally available on the network per semester. A total of 24 courses have been offered on KET since it began operation in 1968. Twenty-six of the forty-two colleges and universities in the state have given credit for one or more of these, at some time. Total enrollment in higher education ITV courses was 874 in 1977.

1.3.3 Continuing Education Audience: There is no formal means at KET for serving the comprehensive instructional needs of professionals via television. Individual groups approach KET with a request for a specific program or series. Some of the higher education courses offered for credit may be appropriate to the training needs of individual (or specialized) professional groups. For example, 36% of the higher education enrollments in 1977 were teachers, when 202 were formally enrolled in in-service training via KET's programming.

1.3.4 State Agency Audience: No formal means exist for KET service to the instructional needs of state agency personnel. KET does contract to produce public service spots or informational films for some agencies, and does occasionally broadcast a management seminar. Individual state employees may benefit from the higher education courses offered by KET.

1.3.5 Adult Basic Education Audience: KET produced a complete ITV series of General Equivalency Diploma (GED) preparation lessons, intended to take an adult learner through a review of basic math, reading, and writing requirements in preparation for taking a GED test. This series is used by educational television broadcasters nationwide, as well as in Kentucky, since its completion in 1974. Between 1974 and 1977, Kentucky enrollments for the GED series totalled 8,461 adult learners (see Sections 8.5 and 10 for further comment).

2.0 Organization:

2.1 Networking: All production and statewide networking of ITV in Kentucky is carried out by KET. All costs for these services are included within the KAET's biennial budget request to the Governor, and no charges are levied to other educational users.

2.2 State Department of Education: The Kentucky Department of Education (DOE) has legal authority for the curriculum of the state's (K-12) public schools. The State Board of Education is the licensee for all public broadcast facilities in the state, and contracts with KAET for their operation. The DOE's Bureau of Instruction provides liaison with KET for the purposes of approving and planning ITV programming to be carried on the KET network, which does not require line-item funding within the Bureau. There is no formal structure at the state level for securing the input of users of instructional programming, or of local education agencies.

2.3 Local Organization: K-12 students attend public schools in Kentucky, which are under the authority of local governments. Some school districts make arrangements for local distribution of ITV via locally-licensed cable TV franchises where open broadcast from KET has (geographically imposed) interference. Most CATV operators provide this school service free of charge. There is no formal structure on the local level from which KET obtains formal or ongoing input on local educational needs regarding ITV.

3.0 Management: The following is quoted from KET's 1978 presentation to the Carnegie Commission on the Future of Public Broadcasting:

> The maintenance and expansion of (Kentucky's) commitment (to ITV) has come, to draw an analog from the business world, through solid servicing of accounts and satisfied customers.
>
> That commitment has not been sustained in areas of the U.S. where the accounts were not serviced...where dollars were extracted from schools and poor quality products were broadcast...with little or no utilization and technical support. ITV must, like any other industry, offer a quality product, market it well and provide local services if that product is to succeed in the market place. What other

industry would dare market a machine with no owner's manual? What other industry would try to compete without research and development funds? Without a marketing force? Kentucky views ITV as a non-profit business in which we follow standard business practices and measures, and it works.

KET firmly believes that final authority for all design and production decisions must rest with the producer. To avoid counter-productive intervention, KET has structured its relationship with DOE so that KET takes the lead in design, production, and scheduling decisions. ITV production funds are appropriated directly to KET (through the Authority), rather than to DOE for subsequent contracting with KET. KET maintains direct purse-string control over production, though informal mechanisms of control by DOE do exist (see Section 3.2). This arrangement has proved to be a workable one, and over the years DOE has been pleased with KET productions.

KET does not charge for broadcast time. In the one situation where it did charge a user fee, KET was confronted with what it considered unreasonable scheduling demands from the paying user. KET maintains a firm policy of control over all scheduling decisions.

There is no intitutionalized or formal advisory role or line of authority for local educators regarding ITV curricula. Instead, local input is provided by KET's annual utilization survey, and the observations of traveling specialists from both DOE and KET.

See Section 10.0 for additional comments.

3.1 Purchase/Produce Decisions:

3.2 K-12 Purchase/Produce Decisions: KET staff survey nationally available ITV programming for technically competent, creative materials, and select those to be screened by DOE's Bureau of Instruction. The Bureau does not use standardized objective criteria when evaluating potential series, but relies instead on the quantifiable feedback from KET's comprehensive yearly utilization survey and the perceptions of KET's traveling utilization specialists and DOE's content specialists.

The Bureau selects from the available series. Where it is felt that an instructional need exists that cannot be met from series that are available, the Bureau requests KET to produce such a series.

3.2 K-12 Production Procedures: When DOE's Bureau of Instruction requests KET to produce an ITV series, KET includes the cost for producing that series in its next (biennial) budget request to the Governor. DOE supports that request throughout the budget's executive and legislative review; this support is critical to eventual state funding for productions. KET's need for continued production budget support helps insure KET's due consideration of DOE's opinions during production, although DOE does not have line authority in this production process.

KET takes the lead in both design and production of any series, calling in content specialists in the particular subject area, from across the country as well as experienced subject area teachers from within Kentucky, based on DOE recommendations. Once the content and format for a series are decided upon, the series goes to script writers and other production professionals within KET, with DOE monitoring progress. Final scripts and pilot programs are evaluated by educators for possible modification before full-scale production of the entire new series commences.

3.3 Scheduling Decisions: KET retains scheduling authority for all programming broadcasts, although KET seeks to work out informal agreement with participating organizations for appropriate time slots. Local educators have no formal method for determining the schedule, which is as follows:

Audience	Days of Week	Times/Day (EST)
K-12	Mon-Fri	8:00am - 4:00pm
Higher Education	7 days	Late afternoon; evenings
Continuing Education	Saturday	9:00 - 11:00am
Adult Basic Education & General Interest	7 days	Evenings; weekends

4.0 Network Configuration: All programming for the network originates at KET headquarters in Lexington, and is relayed (microwave) to all transmitters and translaters.

4.1 Technology and Service: KET utilizes a single-channel, leased microwave network to distribute programming to 15 UHF transmitters (all licensed to the state Board of Education), strategically located around the state; and to 6 translaters. Open broadcast is the primary means of local distribution for KET, although local CATV's may choose to carry these ITV broadcasts.

A recent survey (1978) of 88 of Kentucky's 190 school districts revealed that 35 districts (or 40%) experienced unsatisfactory reception in some of their school buildings. Four districts (or 4.5%) reported poor reception throughout the district. Cable television (CATV) is the preferred distribution means of commercial television in much of Kentucky, and 117 (or 98%) of the CATV systems in the state offer KET programming to schools and home viewers in their services areas; most provide free connection to school buildings.

The state has a capital investment of $10.4 million in this network, primarily in the network center headquarters and the numerous transmitters throughout the state. An annual cost of $2.1 million includes the expense of leasing the microwave interconnect system and the salaries of the 45 engineers who operate the center and travel the state maintaining the transmitters and translaters. Testing and adjusting transmitters to assure good reception is a major part of the engineering staff's efforts.

4.2 Implications for Local Scheduling: Two factors place limits on KET's flexibility of scheduling. First, the state contains two time zones. Second is the technology of the network: a single microwave channel statewide, with open broadcast local distribution, permitting only one program to be broadcast at any time for statewide use. This single-channel broadcast can limit utilization, although this may not be a serious problem for elementary teachers whose class time can be more flexible, and for whom programs are repeated three times during each week.

Tape delay centers within the secondary schools can help resolve scheduling problems for upper grade levels, who generally have less flexible daily class schedules. KET has assisted school districts purchase a total of 220 videotape recorders, approximately 60% of which have gone to secondary schools. KET provides special early morning and late afternoon broadcasts of secondary ITV, for in-school taping off the air. There is no reliable data available on the exact number of videotape recorders in Kentucky's secondary schools, or on how many have a librarian or media specialist to record programs during broadcast for teacher use at other times. It is readily observable, however, that student enrollments in KET courses drop off markedly for the higher grades, as illustrated by the following utilization figures:

Grade Level	Students enrolled in KET/ITV PERCENT
K - 6 (Elementary)	74%
7 - 8 (Intermediate)	46%
9 - 12 (Senior High)	17%

This follows a nationwide trend for ITV utilization to decrease for the higher (secondary) grades, which reflects other factors in addition to method of distribution and scheduling of programs: the secondary level's need for more diversified (and less cost effective) ITV curriculum; fewer nationally available program selections at the secondary grade level.

5.0 Programming: ITV and general interest (cultural and public affairs) program production are KET's fortes. KET aggressively pursues many avenues of funding from state and federal agencies, foundations, and corporations. KET annually spends $75,000 researching available ITV program sources, and developing new series to the production stage. Most years, KET will have one or two new series in various stages of planning, and as many actually in production.

5.1 Purchase: Despite KET's energetic development and production activities, the vast majority of the ITV programming it broadcasts must necessarily be leased or purchased from other sources, illustrated by the following table:

Program SOURCES	Total K-12 ITV Programming PERCENT
Public U.S. film & television libraries; consortia	53.30
Commercial distributors	23.94
Federal sources (HEW and PBS)	9.22
Ontario Educ. Communications Authority (Ontario, Canada)	7.32
KET Productions	5.75
Misc.	.37

During FY 77, KET broadcast a total of 69 series, representing 1,146 individual program titles and 1361.75 broadcast hours for K-12, at a cost of $150,000 for program acquisition.

5.2 Production: KET focuses much of its production energies on those subject areas in which national producers are not meeting particular Kentucky educational needs, such as the state's history, environment, and economics. However, KET has and will continue to produce programming suitable for national use. Several KET-produced ITV series are distributed nationally, illustrating KET's role as a supplier of ITV. KET spends close to $1 million annually on production ("product manufacture").

6.0 Utilization Services: Utilization is another component of ITV in which KET excells. Since its inception, KET has recognized that teacher training for use of ITV is critical to success. When the KET network began operation in 1968, KET secured a federal grant for teacher training, through the MUST (Multi-Media Utilization of Statewide Television) program, initially training 250 teachers through an intensive 5-week summer institute and follow-up during the year.

While some of the field consultations carried out by DOE content specialists pertain in an incidental way to ITV utilization, the vast majority of teacher training and back up, including all print material, is furnished by KET at no charge to all schools. KET refers to utilization service as "product sale" (promoting a series), and "product services" (teacher support), and spends $500,000 for them annually. Each school district appoints a local liaison person to assist KET's seven full-time utilization specialists deliver materials and services.

6.1 Print Materials: KET spends considerable effort promoting upcoming series, through a variety of brochures, and press releases aimed at teachers and the general public. A full complement of ITV handbooks, teacher guides, and student workbooks are provided.

In FY 77, KET distributed:

38,000 teacher hand books
61,500 teacher information/schedule sheets
25,000 series activity books
750,000 student material pieces
30,000 posters
2,000 book marks

906,500 TOTAL PIECES of print material distributed

6.2 Reception Equipment and Maintenance: During the last biennial budget period (FY 77-8), KET distributed $1.1 million, to assist school districts purchase TV sets, videotape recorders, and antenna systems. This matching fund generated total expenditure of $450,000 by the school districts. In addition, KET technical field service personnel continually monitor regional transmitter performance, and provide technical consultation to school districts on antenna systems and in-school distribution systems. Equipment maintenance within the schools and operation of tape delay centers are the responsibility of the school district.

KET's support for school reception equipment, and utilization data, indicate the following availability of ITV programming in the state's classrooms, compared with national averages:

Availability of ITV Programming

	National	Kentucky
Teachers (K-12) with access to TV's	68%	78%
TV set/classroom ratio	1 to 7	1 to 2
Percent of classrooms (K-12) with ITV program access	71.5%	98%

6.3 Teacher In-Service Training: The MUST project (see Section 6.0) terminated when the federal funding program was discontinued. Today KET pays for all teacher training costs from its own budget. The network itself is not used as a means of training teachers in ITV utilization; training is conducted in person by KET's seven traveling ITV utilization specialists, who divide their time between working with teachers, and providing general public relations information to school district administrators, local civic and professional groups, and P-TA's. They maintain personal contacts with the many individuals and organizations around the state which KET counts on as its base of support. Usually, a specialist will spend about two weeks in a school district per visit. Contact is made with the administration, and arrangements made for in-class visits to teachers for personal consultation, and for small group workshops after school hours. Much effort is given to promoting upcoming or new series offerings, and preparing teachers to use them.

During FY 77, KET held 162 workshops, made 1,336 school visitations, 500 presentations to various civic or parent groups, and provided 149 individual and small group consultations. KET estimates that it contacted over 40,000 individuals by these activities.

As a general observation, KET does not address the comprehensive educational needs of smaller audience groups in a particularly aggressive manner. To a large extent, this is the result of the limits of a single-channel network with open broadcast local distribution. Such a configuration necessarily means that in order to program for a small, specialized audience (such as continuing or higher education), KET would temporarily forsake its larger audience groups (K-12, or general interest-PBS viewers). As long as such small audience users can be scheduled into time slots not attractive to larger constituencies, they can be served by KET. KET would, however, be loathe to schedule limited audience programs during weekdays or prime time evening hours, given the limited channel-hour capacity of the network, and the audiences it currently serves.

8.2 Higher Education Users: When the KET network was first established, it included two-way video capability between and among all institutions of higher education in the state. Five universities were to have full production capability and serve as regional production centers for the higher education courses. The various institutions were to share courses (and particularly faculty members) via ITV. Within six years, the system fell into disuse and for financial reasons was dismantled in 1974. (See Section 10.0 for further comments).

Currently, the Council on Public Higher Education (CPHE) provides funding to continue ITV open broadcast of college level courses. CPHE's Management Board is composed of one representative from each of the eighteen colleges and universities participating in ITV, a representative from CPHE, and from KET. Each individual institution is free to decide what courses it will offer for credit, how many credits to grant, additional course requirements (meetings, readings, exams, etc.). Individual students pay tuition fees directly to ITV sponsoring universities.

In 1979, CPHE will spend $350,000 for ITV coordination and programming; state funds are budgeted annually for CPHE. Reliable statewide figures for total viewers (including casual, non-credit viewers) of CPHE higher eduction programming are not available. In 1977, KET's teacher survey found that 6,033 teachers watched a higher education ITV course regularly, but were not enrolled for credit. Formal enrollment for credit, by all types of students, averages about 1,000 per year.

KET determines the schedule for broadcasts, consulting CPHE in the process. Practically speaking, there is usually a concensus. For a brief period of time, CPHE purchased broadcast time; conflicts arose when the Council made scheduling demands KET considered unreasonable. KET favors the present system whereby the Council receives free air time, determined by KET schedulers. CPHE-sponsored ITV programs (most of general academic interest/PBS-type programs) are aired in the late afternoons and early evenings on weekdays, plus weekend mornings and afternoons.

8.3 Continuing Education Users: Supervisory and management personnel in government, business and industry have enrolled in training courses broadcast by KET. Seminars like "Put it in Writing," "Efficient Reading" and "Management by Objective" have been conducted under the sponsorship of the Kentucky Training and Development Foundation, an organization of industry and government leaders formed in 1969 primarily for the purpose of supporting ITV. Teacher in-service programs have also been broadcast through Foundation sponsorship.

The predominant approach for utilizing these open broadcast, specialized training programs is through small group viewing, and follow-up discussion. Recently, KET conducted seminars for professionals, with telephone interaction provided with the course instructor at KET studios. These seminars have included lawyers, nurses, doctors, pharmacists, and other health professionals, and are held between 9:00 and 11:00 am on Saturdays, just prior to the start of KET's normal broadcast day.

KET is increasingly approached by the Continuing Education Council representing colleges and universities unable to offer courses for the specific needs of a relatively small student group. KET anticipates that identification of needs and support for this type of post-secondary education may well develop, although increased use of KET facilities to serve the continuing education audience would require some provision for additional funding.

8.5 Adult Basic Education Users : KET's major effort in formal adult education is the GED series (General Equivalency Diploma), developed and produced 1972-74, first airing the series in Kentucky in September 1974, and distributing nationally through the Cambridge Book Company in New York. This production project was financed entirely by state and regional funds: $127,000 from the Appalachian Regional Commission for content design; and $600,000 in state funds for scripting and production.

The commitment to pursue production funds for this project came from KET and was based on the widespread recognition of severe need for a novel and far-reaching approach to adult basic education in Kentucky, where a 1972 estimate held that 150,000 adults did not have high school diplomas. While formal enrollments in this GED course broadcast by KET average a respectable 3-4,000 per year within Kentucky, KET has itself observed that the series enjoys greater use elsewhere (see Section 10.0 for further comments).

KET's open broadcast of this GED series has several advantages over traditional GED classes. Broadcast may provide the only means to a GED diploma for those who cannot or will not participate in formal programs; are home, job or family-bound; are fearful of failure, or other people; or are reluctant to admit publicly to not having a high school diploma. Tests and surveys, however, have indicated that some form of personal contact between a GED student and instructor is an important contributor to success for most adult students. Periodic testing, with prescription of subject

areas for emphasis, help the student concentrate on problem areas and feel less threatened by the test situation. In general, periodic teacher contact helps to sustain involvement, motivation, and retention of material. This administrative and personal support for the GED broadcast course in Kentucky is provided by a local education authority with which the student has enrolled, and which will eventually award the student's diploma upon successful completion of the GED test.

9.0 Cost Data: Of KET's total biennial budget (FY 1977-78) of $12.86 million, $7.3 million was for direct services to ITV broadcasting; the estimated annual cost of KET's support to ITV is thus $3.65 million. Instructional programming accounts for 61.9% of KET's total (single-channel) broadcast time, and 56.8% of the total budget.

KET's remaining budget of $5.56 million (biennially) supports production and broadcast for general public programming, which represents 38.1% of KET's program hours, and 43.2% of the total budget.

KET BIENNIAL ITV BUDGET

Budget Category	K-12 Support	Networking	Total
Research & Development	$ 150,000		$ 150,000
Program Acquisition	300,000		300,000
Product Manufacture	1,900.000		1,900,000
Product Sales	500,000		500,000
Product Delivery		$ 3,950,000	3,950,000
Product Services	250,000	250,000	500,000
TOTAL	$ 3,100,000	$ 4,200,000	$ 7,300,000

The percentage of networking expense attributable to each audience group can be calculated by determining each audience's percentage of total ITV broadcast hours/one year (see Section 1.3) and multiplying by $4.2 million (biennial total networking costs for all ITV programming):

KET'S BIENNIAL NETWORKING COSTS PER INSTRUCTIONAL AUDIENCE

Audience	Broadcast Hrs/1 Yr.	Percent of Total ITV	Networking Costs
K - 12 (formal)*	1,361.75	48%	$ 2,016,000
(general)**	954.50	32%	1,344,000
K-12 TOTAL	2,316.25	80%	$ 3,360,000
Adult Basic Ed. (formal)*	120.50	4%	168,000
(general)**	307.50	10%	420,000
Adult Basic Ed TOTAL	428.00	14%	$ 588,000
Higher Education	183.50	6%	$ 252,000
OVERALL ITV TOTAL	3,111.25	100%	$ 4,200,000

* Instructional programs intended for (credited) learning.

** General educational programs, for general interest viewing.

Combining each instructional audience's share of networking costs, plus program acquisition and other support service costs, determines the state's total biennial cost of ITV, by audience:

BIENNIAL STATE COST PER INSTRUCTIONAL AUDIENCE
(Estimated for FY 1977-78)

Instructional Audience	Networking Portion	Program & Support	BIENNIAL TOTAL
K - 12 (formal ITV only)	$ 2,020,000	$ 3,100,000	$ 5,120,000
(formal ITV and general educational TV)	3,360,000	3,100,000	6,460,000
Higher Education	250,000	600,000*	850,000
Adult Education (formal ITV only)	170,000	145,000**	315,000

* Council on Public Higher Education

** Based on ten-year life of GED series (total investment: $727,000)

9.1 K-12 Cost Data: The state's total biennial cost for K-12 ITV support is $6.46 million, or an estimated $3.23 million annually. With 693,691 student enrolled in the state's K-12 public schools, this amounts to an annual cost of $4.65/student/year. With an estimated 356,363 regular K-12 viewing audience during 77-78 school year (or 51% of total enrollment), the ITV costs per viewing student total $9.07/viewer/year.

This biennial investment in K-12 ITV ($6.46 million) represents 0.4% of the state's $1.62 billion biennial budget for K-12 public education.

9.2 Higher Education Cost Data: During the 1977-78 fiscal years, the cost of higher education ITV totalled $850,000, with an estimated enrollment during that period of 1,000 students, resulting in an estimated annual cost of $426/enrolled student/year.

KET has identified over 6,000 teachers who report that they regularly watch higher educational programming without enrolling for credit, and no doubt there are other persons viewing various college courses casually, but costs cannot be calculated for such an unquantifiable audience.

9.5 Adult Basic Education Cost Data: The total estimated biennial cost to the state for adult basic education ITV is $315,000, with an estimated 4,000 students participating each year. The cost per enrolled GED student is $39.00/student/year. An Arbitron survey indicates that the total GED audience is 50% larger than the formally enrolled audience; the estimated total GED audience is thus 6,000 per year (casual viewers as well as enrolled students), establishing a total cost of $26.25/viewer/year. (These estimates do not include the student support services provided by local education authorities.)

10.0 Comments: The general criticism can be made that while KET excells at those ITV services upon which it has placed priority (primarily K-12), practically speaking KET takes the lead in forming ITV policy, with the educational community following. KET's response would most likely be that this is the consequence of KET's expertise, and the lack of an aggressive attitude on the part of the state's educational bureaucracy. KET's autonomous position may simultaneously be the reason for its high degree of effectiveness in certain types of services, and its inability or unwillingness to establish others.

In light of KET's history, it could be argued (paradoxically enough) that the state's constitutional prohibition of successive gubernatorial terms, coupled with the practices of "political bookkeeping," actually facilitated the development of KET, although certainly prolonging it, by allowing governors to avoid the financial responsibility for the entire system (passing this responsibility to their successors).

KAET's enabling legislation is vague as regards final authority for ITV curricula, stating only that KET programming must be "...not inconsistent with the curricula prescribed or approved for the public schools of the commonwealth by the department (of education) or the board (state board of education)..." On other matters, the legislation is remarkably specific and far-sighted. For example, it mandates that KAET will establish a matching grant program to assist school districts with the purchase of reception equipment, and if requested to do so by districts, KAET may actually carry out

large-scale cooperative buys of such equipment for the districts. This contrast between vagueness in curricula responsibility and specificity for "total system" planning seems to reflect the considerable forethought of the early prime movers of KAET. They knew full well all the components necessary for a successful system, suspecting that formal direct connections to DOE or the universities would embroil KAET in unnecessary politics; they have been riding this middleground ever since.

While the marketplace analogy (p. 160) helps KET make pertinent observations about the national ITV scene, it also has additional significance. KET maintains that it has the expertise in television, not the educators whom it serves. KET believes that once the content of an ITV series has been determined, the best thing educational bureaucracy can do is step aside and let the design and production professionals on KET's staff do their work.

In some states (Maryland, for example), the state DOE employs its own ITV design experts who work with the ITV producing agency to represent the DOE's concerns throughout the entire design and production process. KET maintains that it has not been uncommon in arrangements of this type for DOE personnel, through the enforcement provisions of the production contract, to become too actively involved in the production process, sometimes demanding that instructional television accomplish the impossible.

KET retains explicit control over all aspects of a total ITV delivery service, integrating these into an effective system-as-a-whole approach which would be impossible if individual system responsibilities were divided. The consequence of Kentucky's particular solution to the problem of fragmented services is that user groups participate in policy only through informal channels of authority. It is argued that the wisdom of such an approach is borne out by "sales," that is, KET's level of utilization, which is a high 51% of the K-12 audience. Herein lies the utility for KET of the marketplace analogy. For, just as some would argue that businesses should be controlled by marketplace pressures of competition rather than direct regulation, KET argues that it should not be directly regulated by its "customers." Rather, KET requires a degree of autonomy from its customers, who can effectively exert control over KET by using or not using its programming, freely choosing whether or not to "purchase" KET's "product," support or not support KET budget requests, etc.

There are, however, some problems with the marketplace analogy as justification for KET's policies, since KET is the only "vendor" of comprehensive, statewide ITV services, and it is not likely that the state of Kentucky would ever create another. Within the scope of this research it is difficult to assess whether or not KET has provided a service that is substantially better than in states with more built-in controls to assure educators' involvement. KET is utilized more than most, but this could be attributable to other factors.

The prime causes for the lack of use of the KET network for higher education course offerings appear to have been a lack of clear-cut leadership among the higher education community; lack of commitment from top level university administrators; and, to some degree, resistance from university faculty. Some historical perspective may serve to illustrate these problems:

The first attempt to organize institutions to utilize ITV involved five colleges and universities, plus KET, which together constituted the Instructional Coordinating Committee (ICC). Five subcommittees were established to handle the various administrative functions, and seven content subcommittees had responsibility for curriculum development. No single institution had lead responsibility, and the ICC was too unwieldy to accomplish its goals. For example, it took two years to activate the content subcommittees to begin their work of designing courses. After two more years, a total of four courses had been designed, but there was no definite plan for funding course scripting and production.

In 1971, the participating universities admitted the shortcomings of the ICC. They decided to create a separate administrative entity, a consortium, with staff to develop and administer a curricula of ITV offerings for college credit. By 1973, the resulting Kentucky Institute for Post-Secondary Education Through Television (KIPSET) received contributions totalling $40,000 from the participating universities, plus staff salaries paid by KAET. KIPSET staff began the task of coordinating tuition payments, accreditation, selection and scheduling of the four ITV courses offered over KET's open broadcast in 1974. Two courses were produced by participating universities, and two were leased. A single closed circuit course was also available. Total enrollment for 1974 was 633 students.

The university presidents insisted that continued funding for KIPSET be provided through KAET, in its regular budget request. Universities were unwilling to include ITV within their own budget requests for fear this would result in legislative or executive cutting of other portions of their budgets. This funding strategy was followed, but when the Governor's staff reviewed the KAET budget request in 1974, all funds for higher education broadcasting were eliminated or redirected, at the Governor's insistence that all services for higher education be paid for by the universities, and not KAET. KIPSET and the closed circuit network died. At this point (1974) the Council on Public Higher Education did provide some funding for continuing higher educational ITV (see page 13).

The overall low enrollment in Kentucky ITV higher education courses is in part due to the limited broadcast hours devoted to this programming, necessitated by the single-channel network broadcasts which must also meet other educational broadcast needs. In addition, there is the lack of an aggressive approach by the colleges and universities, as well as KET, regarding higher education ITV. The historical lack of leadership in this area, unless improved in the

future, is unlikely to result in legislative or executive support to expand service.

The GED series produced by KET in 1972-74 has been used successfully within the state, but appears to have greater use in other states (see p. 167). KET spoke to this in its 1978 presentation to the Carnegie Commission:

> Interestingly enough, Kentucky, the state which funded the project, has not enjoyed such wide use. Why? Because the commitment to the use of television via broadcast and/or cassette as a viable means of delivering instruction to adults was not present at the critical administrative level... that of the adult education hierarchy. The support was there at the executive and legislative levels. Had KET been successful in developing commitment from adult education leadership, we could have realized the success experienced by Texas... which, through the cooperative efforts of the Adult Education Division in the state Department of Education and public broadcasters achieved 12,000 enrollments in one run of the series, and Maryland, which enrolled 8,000 through the same cooperative effort. It is important to note that in Texas and Maryland, the use of the series was determined and financed by the adult educators, not the broadcasters.

Paradoxically, KET is echoing Governor Breathitt's criticism in 1964 that to be effective, ITV must be advicated AND FUNDED by educators. Perhaps in this case KET's preference to remain aloof from direct dependency on the educational establishment contributes to some educators' lack of commitment: a "chicken or the egg" dilemma.

History indicates that if KET had relied solely on the educational establishment, it would probably not even exist today. It is also very likely that unless reliance increases in the future, KET will be unable to provide a greater variety of services to a more diversified audience.

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STATE OF OREGON

Management & Operations

Centralized broadcast service networks instructional and public programming to (centrally licensed) public television and radio stations, reaching a majority of state residents; commercial and cable stations also serve as program outlets in some locations.

Oregon Board of Higher Education
Nine-member (Governor appointed) governing body for state university operations, and the Oregon Educational and Public Broadcasting Service, holding license to four public television stations, two public radio stations, and four translators, on behalf of OEPBS.

Division of Continuing Education
Prcvides coordination for higher education instructional programming aired over OEPBS network, sponsored by individual institutions through Campus of the Air.

Oregon Educational and Public Broadcasting Service (OEPBS)
Established by the state in 1922 to broadcast educational radio programs, OEPBS provides central administrative management and program networking to the state's public television and radio stations; over 100 local cable TV stations; and one commercial television station (in locations without OEPBS reception). OEPBS broadcasts single-channel K-12 ITV (14% of annual channel-hours); higher education ITV (9%); and public programming (77%). Seven divisions operated on a total budget of $1.5 million in FY 79.

Campus of the Air
Operated by OEPBS; from 4 to 8 credit higher education ITV courses are provided per semester, in cooperation with interested colleges or universities in the state. The Oregon Board of Higher Education provides some administrative support; portion of student course fee returns to sponsoring university.

Oregon Department of Education (DOE)
Began utilization of OEPBS broadcast services in 1967. DOE coordinates, with OEPBS, all K-12 ITV programming networked, a majority of which is K-8; some secondary. Instructional Technology Specialist, with support staff, operated on FY 79 budget of $106,000.

Advisory Council is a seven-member group appointed by the Superintendent of Public Instruction (DOE) to provide (regionally-balanced) input on overall ITV activities (K-12).

STATE OF OREGON

Funding
(Based on FY 1979 Agency Budgets)

CAPITAL INVESTMENT			$ 5,140,000
Annual engineering, operations & maintenance			$ 1,500,000
ANNUAL COST OF Instructional Broadcasting			$ 450,000
	K-12	Higher Ed.	
Oregon Educ. & Pub. Bdcst. Serv.			
K-12 ITV Services (14% of total admin. costs)	210,000		
Higher Education ITV Services (9% of total admin. costs)		135,000	
Oregon Dept. of Education			
Program Acquisition Grant	70,000		
Administration (est.)	36,000		
Est. TOTAL State ITV Support	$ 326,000	$ 135,000	

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS	ANNUAL COST PER ENROLLMENT
K-12 Public Schools		
Total Enrollment	460,000	$ 0.69
ITV Enrollments (multiple student count)	552,000	0.57
Higher Education	750 (average)	$ 108.00

VIII. STATE OF OREGON

1.0 Background: The Oregon Educational and Public Broadcasting Service (OEPBS) is an educational broadcasting network operated by the state Board of Higher Education. The network includes four P/ETV stations, and two public radio stations, all licensed to the state Board. The potential audience for the state's four public television stations totals 2 million residents (80% of the state's total population), most of whom reside in the Willamette Valley. Forty percent of the geographic area of the state has no reception of the broadcasts from these centrally-licensed public television stations.

The Oregon Department of Education (DOE), as required by state law, selects all programming for K-12 in school use; OEPBS selects and/or produces programming for adult audiences, including the credit telecourse offerings by the Campus of the Air.

1.1 History: Educational broadcasting began in Oregon in 1922, with the founding of KOAC radio station on the Oregon Agricultural College campus in Corvallis. When the state Board of Higher Education was formed in 1932, KOAC became an "all state" station, serving as a means of communication between the Oregon public, and the state-owned institutions of higher education.

In 1951, University of Oregon Chancellor Byrne appointed a study committee to investigate the future of educational television for the state's universities. Approved by the state Board of Higher Education, the report was submitted to the Governor. At this time, few Oregon citizens were familiar with television; only one station (channel 27 in Portland) was on the air in the state. When the Federal Communications Commission (FCC) allocated channels for noncommercial stations in 1952, the staff of KOAC radio began a deliberate program of promoting educational television. Several interested citizens groups were also formed to support ETV.

Oregon ETV proponents eventually persuaded the 1955 legislature to form the Oregon Educational Television Study, under the direction of the state Board of Higher Education.

Concurrently, the Board applied for and received a Ford Foundation grant for an open broadcast inter-campus exchange between Oregon State University (formerly Oregon Agricultural College), the University of Oregon, the Oregon College of Education, and Willamette College. KOAC-TV signed on the air in October of 1957, providing instructional broadcasts with the Ford Foundation grant, and using a variety of programs from National Educational Television (NET). Oregon needed junior colleges but had a population distribution which made it difficult to finance new institutions. KOAC-TV and

the Oregon State Board of Higher Education's Division of Continuing Education, submitted a joint proposal to the U.S. Office of Education (USOE) for a TV Junior College. With the opening of the 1959-60 school year, the TV Junior College was on the air. However, the Division of Continuing Education provided a full range of education services. KOAC staff were broadcast oriented, and had goals that differed from those of the division.

The inter-campus exchange (initiated by the Ford Foundation grant) was not successful, primarily due to the reluctance of the participating universities to use materials from other universities when each school had instructors in the same subjects. In fact, the only broadcast considered successful was a program on health care, taught by the only qualified teacher in any of the participating institutions.

TV Junior College was unsuccessful in attracting the intended client audience; rather, its audience was primarily teachers, needing credit courses to update their teaching certificates. By the time the USOE grant ended in 1963, several junior college physical plants had been constructed; TV Junior College languished.

In 1971, the legislature created the Oregon Educational and Public Broadcasting Service (OEPBS) within the Office of the Chancellor of the State Board of Higher Education, removing the responsibility for educational broadcasting from the Division of Continuing Education. The new OEPBS took over the faltering TV Junior College and renamed it the Campus of the Air.

Since 1973, the Campus of the Air has offered 4-8 college credit courses each semester. Although enrollment is low, Campus of the Air is considered successful because the majority of enrolled students are in isolated areas, where they are unable to receive other higher education services.

From its inception, KOAC-TV broadcast the Oregon School of the Air, transmitting instructional television programs for grades K-8. While several of these ITV programs were locally-produced, the majority were from National Educational Television (NET). The 1967 legislature mandated that the Oregon DOE select and approve all K-12 instructional broadcast materials.

Today, OEPBS offers instructional programming (K-12), Campus of the Air, and general interest cultural and public affairs programming.

1.2 Governing Body: The Oregon State Board of Higher Education is the licensee of the state's four P/ETV stations, on behalf of the Oregon Educational and Public Broadcasting Service (OEPBS). The Board's nine members are appointed by the Governor.

OEPBS is authorized to broadcast radio and television general programming for the cultural and information needs of the people of the state of Oregon; to broadcast instructional programming for in-school use in cooperation with the Oregon DOE; and to broadcast post-secondary programming in cooperation with state and private colleges and universities in the state.

1.3 Audience: OEPBS, through its four public television stations, broadcasts ITV (K-12 and higher education); general educational programming; and public interest and cultural affairs programming to more than 1,250,000 people in the state, primarily in the populous Willamette Valley, as well as to residents of Southwestern Washington.

Analysis of the OEPBS schedule indicates the following percentages of channel hours dedicated to specific audiences:

K-12	Higher Education	General Interest
14%	9%	77%

1.3.1 K-12 Audience: The Oregon DOE approves ITV programming for the state's public school students. During the 1976-77 school year, ITV had 552,103 enrollments (without data on the numbers of students that were enrolled in more than one ITV series). A limited number of secondary level courses are offered on the network; most ITV programming is for the K-8 grade level. This ITV programming is broadcast five hours a day, five days a week, during the school year.

1.3.2 Higher Education Audience: The Campus of the Air provides between 4-8 credit courses per semester, with course offerings initiated by OEPBS, in conjunction with an interested university or college. Student enrollments total between 500-1,000 students per semester (see Section 8.2).

1.3.3 Continuing Education Audience: Various state agencies have offered professional continuing education and training over OEPBS. The Oregon Board of Nursing has offered classes for practicing nurses; courses for physicians have been offered, along with Emergency Vehicle Training and classes that prepare persons to be licensed as pesticides handlers (see Section 8.2).

1.3.4 State Agencies Audience: OEPBS broadcasts statewide coverage of the legislature. Two hours a day are produced live, with a half-hour evening news summary. This is the most extensive media coverage of any state legislature.

2.0 Organization: The Oregon Department of Education (DOE) is responsible for K-12 programming; OEPBS programs the campus of the air and the public broadcasting schedule.

2.1 Networking: OEPBS operates a network headquarters and a micro-wave connection system between four stations and four translators. Three stations generally carry the same network program feeds; the fourth station (whose broadcast area completely overlaps at least one other OEPBS station) carries substantially the same programming, but on a different schedule.

2.2 Organizations with Statewide Purview:

2.2.1 Oregon Department of Education (DOE): The Oregon DOE supervises K-12 programming on the OEPBS network. Overall coordination resides with the department's Instructional Technology Specialist, who is advised by a seven-member statewide Advisory Council. The Council is composed of persons from various geographic areas who are involved in instructional television, and are appointed by the state Superintendent of Public Instruction for staggered three-year terms. This council evaluates educational needs, prospective programs and provides guidance on policy.

In relation to the full-time Instructional Technology Specialist, DOE has two full-time equivalent and several part-time persons involved with ITV.

Including personnel, DOE had a FY 79 budget of $106,000.

2.2.2 Universities: The Campus of the Air is operated by OEPBS in cooperation with the state supported and private colleges (see Section 8.2).

2.2.4 State Agency Organizations: The various state agencies that have offered courses have been responsible for content (see Section 1.3.4).

2.2.5 Public Organizations: ASCO, an advisory committee comprised of statewide nonprofit organizations with statewide affiliates or chapters, serves an an advisory panel to the Executive Director and staff of OEPBS. ASCO assists in: identifying needs, interests and problems of their organizations and the community which can be met through public television; evaluating OEPBS programs and policy.

3.0 Management: A full-time professional staff with an Executive Director has responsibility for the day-to-day operation of OEPBS, which serves as a centralized administration for all four P/ETV stations. In order to work within the confines of a very limited budget, OEPBS has no individual station managers. All P/ETV station licenses are held by the Oregon DOE.

Production and programming staff report to the Director of Programming and Productions, including the respective producers and directors of the three stations with production capability and the coordinator of capital broadcasts from the capitol in Salem.

The directors of Operations and Engineering at headquarters in Portland supervises the technical staffs of the individual stations.

Also reporting directly to the Executive Director are the Director of Information, the Coordinator of Instructional Programs and Film Services, the Director of Development and the various administrative services.

3.1 Purchase/Produce Decision: Although OEPBS is committed to local origination, they can best be described as primarily a consumer of programming.

Over the years, OEPBS has carefully surveyed its audience both general and adult education in a number of ways. Twenty-two thousand (22,000) copies of their program guide are circulated, and each of these 22,000 recipients are surveyed. All telephone calls regarding programming are logged.

From this system OEPBS has gained information about their audience. Armed with this information, the programming Committee of OEPBS (consisting of the Directors of Information Development, Operations, Programming and Production, and the Executive Director) buys "almost anything that comes along that we think our audience would like."

Through its annual polling of teachers and its Advisory Council, DOE evaluates its ITV offerings. Prospective courses are screened by the Council. DOE provides funds to OEPBS for the lease or purchase of selected ITV courses. If educational need is found for which there is no existing materials, DOE conducts a study to determine if a course should be produced.

3.2 Production Procedure: DOE has had ITV courses in subjects unique to the Northwest produced through contracts with OEPBS or Oregon State University (OSU). Where a course is produced is determined by DOE's perception of each groups ability to provide the program (for example, programs that require a great deal of content research are usually produced by OSU.

3.3 Scheduling Decisions: OEPBS broadcasts daily from 7:30 am-12 midnight; Saturday 6am-12 midnight, Sunday noon-12 midnight. During the school year, four and one-half hours daily are set aside for K-12 instructional broadcasts. The remainder of the day is a mix of public broadcasting and Campus of the Air.

All programming patterns have been decided by OEPBS through trial and error over the course of many years. OEPBS uses, its survey methods (of the public) and DOE's utilization surveys to assist in determining schedules.

OEPBS leaves some room in its schedule for rebroadcast of programs in heavy demand. They have also used their pre-sign on times for rebroadcast. Users who primarily influence this decision are

organizations which represent a large constituency through ASCO (see Section 2.2.5). In some cases these organizations have provided funds to help defray the additional broadcast cost.

4.0 Network Configuration: OEPBS owns and operates two public radio stations for P/ETV stations and four translators, interconnected by microwave. Additionally, OEPBS feeds programming to over 100 local cable television (CATV) stations. The total capital investment in the OEPBS network (including stations) is $5.14 million. ITV programs are also fed to broadcast outlets not licensed to OEPBS, including an ITFS system, a countywide school closed circuits network and the one P/ETV television station in the state that is locally licensed. DOE also purchases time from a commercial station which serves an area not presently reached by any Oregon Public television signal.

4.1 Technology and Service: Two-thirds of the population of Oregon live "in the valley"--in the Willamette Valley area between Portland and Eugene.

The OEPBS microwave system follows the Willamette Valley from Portland, through Salem and Corvallis, South to Eugene, where OEPBS has studio privileges at the University of Oregon television studio.

From Portland the signal is microwaved across the state, east to LeGrande (which has only a transmitter).

The microwave carries both television and composite radio signals.

Each of the studios can originate programming for the system. The network is two-way capable but the vast majority of programs (with the exception of legislative coverage from Salem or sporting events from Corvallis) originate from network headquarters in Portland and are distributed via single channel long lines.

From master control in Portland, two different programs can be switched simultaneously.

The OEPBS network had an annual budget of $1.5 million and employed 75-85 full-time employees in FY 79.

4.2 Implications for Local Scheduling: Local users have to accommodate to OEPBS's feed. Many school districts have videotape recorders and are able to tape off the air and use programs at their own convenience.

5.0 Programming: OEPBS is authorized to broadcast radio and television general programming for the cultural needs of the people of the state of Oregon; to broadcast instructional programming for in-school use in cooperation with the Oregon DOE; and to broadcast postsecondary programming in cooperation with the private and state colleges.

OEPBS has placed its major emphasis on getting signals to all of Oregon. The Executive Director feels that OEPBS would be remiss in its responsibilities if it were to go into expensive productions before they could be received by all the people of Oregon.

5.1 Purchase: Limited purchasing resources are invested in buying or leasing the best available programming for its public audience. OEPBS maintains world-wide buying contracts. Constantly on the search for programs, OEPBS has on several occasions aired programs before even PBS has secured the rights.

DOE provided OEPBS with $70,000 in FY 79 for ITV program acquisition and production.

5.2 Production: OEPBS specializes in producing programs of in-state interest. Examples include the most extensive coverage of a state legislature done by any state; coverage of local concerts, meetings, and the broadcasting of some Oregon State University basketball games (made all the easier by the location of the Corvallist television station in quarters adjacent to the campus gym). OEPBS also produces mostly low production value telecourses for Campus of the Air, in subject areas of particular interest to Oregonions.

6.0 Utilization Services: OEPBS provides programs guides for all its programming; DOE provides program guides for ITV programming.

Both DOE and OEPBS conduct annual user surveys (see Section 3.1).

6.1 Print Materials (K-12): DOE produces and distributes print teacher guides to accompany each broadcast series. Print materials are sold to school districts with prices and ordering information provided in the program guide.

6.2 Reception Equipment and Maintenance: In-school reception equipment and its maintenance is the responsibility of the local school district. Many schools have videotape recorders for off-the-air taping.

6.3 Teacher In-Service Training: DOE, in cooperation with OEPBS, conducts in-service workshops on programs and equipment use with school staff.

7.0 Special Services: At times OEPBS uses the facilities of their public radio stations to rebroadcast the audio portion of televised class for student review (this is possible because many courses are of the "talking head" variety).

OEPBS also broadcasts the Golden Hours radio network and radio reading service. This is a subcarrier which can only be received on special receivers supplied to the visually handicapped and elderly.

8.2 Higher Education: The Campus of the Air is operated by OEPBS in cooperation with a participating college or university.

OEPBS generates ideas for classes, usually based on expressed community public need. From this idea the OEPBS Coordinator of Instructional Programs and Course Development will approach one of the universities to see if they are interested in co-sponsoring the class. If the college is interested, OEPBS will ask for recommendations for an instructor who would be appropriate. They then approach the instructor to find out if he/she would be interested in developing the course and is able to work with media.

An instructor is paid $100 for each lesson developed and $200 for writing the viewer's guide.

When the course is offered, the registrar of the Board of Higher Education, Division of Continuing Education registers the students, collects fees, and records the grades. The Division collects $45/enrolled student for 3-credit courses, of which $4.00 is paid to the cooperating college.

9.0 Cost Data: OEPBS operated on a FY 79 budget of $1.5 million, 60% of which is state dollar, 15% federal, and the remainder 25% from contributions and miscellaneous income.

OEPBS had a staff of 75-85 full-time employees in FY 79. Approximately 30 are involved in production. The remainder are technical and administrative staff.

9.1 K-12 Cost Data:

DOE			
ITV Program Acquisition Grant	$70,000		
ITV Administration	36,000		
			$106,000
OEPBS	1,500,000 x .14*	=	210,000
Total Expenditure K-12			$316,000

Oregon spends 57¢ annually for each ITV enrollment (552,000 enrollments; no data on multiple enrollments) or 69¢ for each of the 460,000 students enrolled in public school in the state.

(* % of total annual channel-hours devoted to ITV (K-12) broadcasts.

9.2 Higher Education Cost Data:

OEPBS FY 79 Budget: $150,000 x .09* = $135,000

For an average yearly enrollment of approx. 750 students, OEPBS spends an estimated $108/enrollment/year for higher education ITV (which does not include participating universities or Division of Continuing Education administrative costs.)

*Percentage of total yearly channel-hours devoted to this audience.

10.0 Comments: The Oregon Legislature is considering a bill which would alter the structure of OEPBS, a move that OEPBS management opposes. At present, OEPBS is governed by the State Board of Higher Education. Under this arrangement OEPBS's budget request is just one item in the Board's annual request to the legislature. Some legislators and interested citizens feel that the current system does not provide OEPBS sufficient voice in budget negotiations. They feel that when the Board has to weigh the needs of OEPBS against other needs OEPBS loses. If S.B. 805 passes the legislature governance of OEPBS would be transferred to a state funded public broadcast commission. Proponents of this plan point out that Oregon has a commission on just about everything. So that this shift would make the governance of OEPBS compatible with the remainder of state administration.

However, discussions with Ed Geis, of the Oregon for Responsible Broadcasting (the principal public interest group supporting this bill), Tom Towslee, Legislative Assistant to state Senator John Ripper (Chairman of the Ways and Means Committee and sponsor of S.B. 805) and Dr. Donald Bryant, Executive Director of OEPBS, indicate that what is really at stake is the broadcast philosophy of OEPBS. This problem is summed up in OEPBS's name: "Educational and Public." It is a dictomy between instructional broadcasting on one hand and cultural and public affairs broadcasting on the other. Dr. Bryant commented: "It's easy to get hung up with the PBS type offering, instruction is not getting its fair share." Tom Towslee says, "S.B. 805 recognizes that the future is with PBS rather than ETV. The recent Carnegie Commission Report points this out. S.B. 805 doesn't mandate this change, it doesn't order them to take advantage of grants, although it is expected that a commission will be more vigorous in seeking out grants. Grants are more readily available for PBS type of programming."

A look at successful producers indicates that success has been achieved where there are: extensive production facilities; large production budgets (one University of Mid-America series, for example, can cost almost as much as OEPBS's budget); a large population base to provide a potential audience; and either close proximity to existing major production facilities (New York, Boston,

Washington, Los Angeles, San Francisco) or consistent state support for the production arts (see University of Mid-America and Ontario). Unfortunately, Oregon has none of these.

It is not clear just what kind of programming mix is envisioned by OEPBS's critics. It appears that "more PBS-type programming," actually means higher production values for locally originated programming. And in this case, higher production values means a larger production budget, more local autonomy for the individual stations, on-site management staff and more (public) access for production artists.

OEPBS broadcasts more adult (evening hour) cultural and public affairs programming, this could only be accomplished by reducing the offerings of the Campus of the Air. The bulk of OEPBS television service is delivered to the populous Willamette Valley (where people have reasonable access to universities and other cultural/educational resources). In fact, a majority of the valley's residents receive two different OEPBS stations, and a significant portion receive three (two of these carrying identical programming). Most students registered in the Campus of the Air reside in rural communities on the fringes of OEPBS' television signals. Many rural areas receive programming through their local cable companies, but a full 40% of the total area of the state receives no public instructional television service.

This arrangement may cause the more densely populated Willamette Valley to have a false sense of the availability of Campus of the Air television services to the entirety of the state, when in fact many persons (in less populated regions), whose higher education needs can only be met by the Campus of the Air, are not served at all. Campus of the Air offerings are not vital to Willamette Valley residents, as is born out by their disproportionately low enrollments. Their frustration at having much of their public television schedule dedicated to this type of programming seems to be a contributing factor to S.B. 805. An expansion or reallocation of broadcast facilities, coupled with more regionalized broadcast schedules, could be a partial answer to the problem.

OEPBS claims that its priority must be to deliver service to all of the state before it can put more emphasis on in-state production. According to its critics, OEPBS is not aggressively pursuing either goal.

A 1965 planning document aimed at designing a state network envisioned 20 stations with six complete fully operational production facilities. Tom Towslee comments the OEPBS is "No closer to fulfillment of that then it was in 1965."

OEPBS's budget is clearly inadequate to provide a comprehensive statewide network and provide locally produced, high production value programming. Both OEPBS and legislators claim they would like to accomplish these goals but a firm commitment is not yet evident. The present controversy indicates that state policy

regarding public broadcasting is an issue in Oregon, and perhaps some decisions will be made in the near future.

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Mr. Tom Towslee-- Legislative Assistant to Senator John Ripper, Oregon State Senate

PROVINCE OF ONTARIO

Management & Operations

TVOntario's single-channel microwave network provides "open sector" (public) and instructional programming (primarily K-13; some higher education); also transmitted via local cable, commercial, and (limited) satellite transmission within province.

"We believe television should encourage viewers to do other things."

Ontario Educational Communications Authority (OECA)
Established by legislation in 1970, OECA is a nonprofit "crown corporation" supported by provincial funding to provide educational television in the province. The 13-member Board of Directors are appointed by the Lt. Governor in Council, for three-year terms, to represent general population. OECA's Chairman of the Board is (salaried) chief executive officer. OECA owns and operates TVOntario (Toronto) and nine transmitters. Seven divisions include: Educational Media; French; Operations; Corporate; Finance; Information Services; and Research and Planning. Annual budget request submitted through Ministry (Department) of Culture and Recreation; major funding also received from Ministry of Education (for K-13 ITV); some funds for higher education ITV. Total FY 1978 budget: $20 million.

TVOntario
Single-channel open broadcasts originate at TVOntario (channel 19, Toronto) and reach 85% of Ontario residents through nine transmitter network (all licensed to OECA).
K-13 instructional broadcasts total 22% of annual channel-hours; higher education ITV totals 4%, with remaining 74% of broadcasts for "open sector" (general public). Sixty percent of all broadcast programs are produced by OECA. TVOntario programming is also available through purchased time on the federal Canadian Broadcasting Corporation (CBC) network; 22 commercial TV stations; 180 cable outlets, and nine remote satellite-receiving earth stations.

Regional Councils
OECA, by statute, established five regional councils to serve in advisory role regarding regional broadcasting and educational needs. The councils, with fifteen public members each, represent: Northwest, Northeast, Southwest, Southcentral, and Eastern Ontario.

Ministry of Culture and Recreation
OECA's annual budget request is submitted for legislative review and approval by this Ministry (Department). Total FY 1978 budget provided $11.3 million for general operations, administration, transmission, and "open sector" programming.

continued...

PROVINCE OF ONTARIO (cont'd)
Management & Operations

Ministry of Education (MOE)
This Ministry establishes educational priorities and curriculum guidelines for K-13 schools in province. In FY 1978, MOE provided $8.5 million to OECA for elementary/secondary ITV program acquisition and development.

Ministry of Colleges & Universities
During FY 1978, this Ministry provided OECA with $750,000 for development of three higher education ITV courses, offered on-air for the first time in FY 1979. Ministry merged with Ministry of Education in 1979.

Committee on Post-Secondary Educational Programs
Twelve-member committee, including OECA and Ministry of Colleges and Universities (now Ministry of Education) staff, formed to coordinate development of higher education instructional courses, also suitable for general public viewing. Level of higher educational ITV in Ontario is not expected to increase.

PROVINCE OF ONTARIO

Funding
(Based on FY 1978 Agency Budgets)

CAPITAL INVESTMENT	$ 17,000,000
Annual engineering, operations & maintenance	$ 2,309,000
ANNUAL COST for Instructional Broadcasting (Est.)	$ 10,307,984

	K-13 (Estimated)	Higher Ed. (Estimated)
Ontario Educ. Comm. Authority		
Program Production	6,722,400	750,000
Utilization & Print Mtls.	779,250	(users)
Broadcast Distribution	507,980	92,360
Non-Broadcast Distribution	390,000	33,948
Program Services (Research, Planning & Eval.)	340,850	-0-
Advertising	142,098	25,836
Administration	442,420	80,440
TOTAL ITV Support	$ 9,325,400	$ 982,584

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS	ANNUAL COST PER STUDENT
K-13 Public Schools		
Total Enrollment	1,912,000	$ 4.88
Regular Viewers (45%)	853,360	$ 10.93
Higher Education	Unavailable	Unavailable

NOTE: All figures represent Canadian dollars.

IX. PROVINCE OF ONTARIO
Canada

(NOTE: In those cases where Canadian governmental titles have direct parallel with Alaskan titles, the Alaskan designation will follow the Canadian, in parenthesis.)

1.0 Background: TVOntario, operated by the Ontario Educational Communications Authority (OECA), was the first educational television station in Canada (on the air in 1971) and now serves the Province of Ontario through a network of nine television stations, purchase of time on the national Canadian Broadcasting Corporation (CBC) network, and through various cable stations.

Ontario contains a diverse population, primarily English-speaking, with a sizeable French-speaking minority. There are several large population centers, particularly Toronto; the rest of the province is rural, with Northwestern and Northeastern populations extremely isolated.

Ontario has a uniform province-wide public school curriculum for K-13 grades (elementary/secondary), developed by the Ministry of Education (Department of Education), although there is considerable flexibility for individual school districts' implementation of these standards. Because of Ontario's isolated regions, standardized school curriculum, and single time zone, the Ministry of Education pushed for the development of instructional television as a means of enriching classroom instruction.

TVOntario produces and distributes consistently award-winning instructional and "open sector" (public) television programming.

1.1 History: The foundation for the Ontario Educational Communications Authority (OECA) was laid by an informal committee of high ranking government officials called together by the Province (state) Minister of Education (Commissioner of Education) to explore the potential of television for education. From the recommendations of this group, the Minister of Education formed the Educational Broadcast Committee (EBC) in 1966, composed of senior officials of the Ministry of Education, and the television industry.

Beginning in 1968, the EBC acquired and produced K-13 (elementary-secondary) instructional television programs, and purchased some network time from the Canadian Broadcasting Corporation (CBC) for broadcasts to the schools. At that time, the Ministry of Education was responsible only for K-13 instruction (later to gain responsibility for higher education), and could only offer programming for the elementary/secondary public school audience. Many commercial broadcasters were opposed to government-sponsored television, yet EBC had to depend upon them to meet its scheduling needs.

Because of these factors, the EBC prepared a legislative proposal to establish a "crown corporation" (nonprofit, provincially-supported), to be responsible for educational broadcasting in Ontario. In 1970, the Ontario Educational Communications Authority Act established OECA, as a crown corporation, mandated to: serve all potential educational broadcast users; become the licensee of an independent station and purchase equipment; and provide utilization services. The Ministry of Education continued to provide money for acquisition and production for K-13 programming, but the Act provided that OECA's major funding would come through the Ministry of Culture and Recreation (concerned with cultural and public affairs; no Alaskan equivalent), thus bringing together OECA's service for instructional and public audiences.

OECA immediately set about the task of establishing TVOntario as a separate station, instead of a programming time block on the CBC network. By September 1971 the transmitter for TVOntario (channel 19, Toronto) was operational.

The educational establishment of Ontario was(is) very conservative. Many classroom teachers feared that instructional television (being introduced by the Ministry of Education) would cost them their jobs. To overcome teacher resistance, first EBC and later OECA carefully presented programs produced under their auspices as "audio-visual aids only." Production values were low; according to Al Fasan (OECA's Director of School Programming), it was "the type of programming that very evidently could never replace a teacher. It also was not very good."

By the mid-1970's it was evident to OECA that if they continued as they were with low production value programs, OECA would soon be out of business. Changes had to occur both in the types of programming offered and in number of households reached by TVOntario.

In 1974-75, OECA experienced a major reorganization. More cultural and public affairs programming was aired, with the ITV programs designed to be an integral part of the curriculum. A major expansion of transmitting facilities also occurred. At this point, OECA began to produce the high production value programming for which it is now famous, award-winning programming which is used extensively thoughout all of Canada and in thirty-four (34) states in this country.

Today TVOntario reaches 85% of the provincial population. Three transmitters were added in 1978, two more in 1979, for a total of nine transmitters in the network.

1.2 Governing Body: OECA is a crown corporation, an autonomous nonprofit broadcast foundation supported by provincial tax dollars. It is directed by a 13-member Board of Directors, appointed to 3-year terms by the Lt. Governor in Council (Lt. Gov.). Members are representative of the general population, from the education and business community. By statute, no member may be a civil servant.

Special attention is given to representing the various geographic and lingustic goups within the province.

The Chairman of the Board of Directors is the Chief Executive Officer of the Authority and is a salaried position.

All by-laws of the Authority must be filed with the Minister of Culture and Recreation. The Lt. Governor in Council has veto power over Authority by-laws. OECA submits its annual report to the Minister of Culture and Recreation, who then submits this report to the Ontario legislature along with its total annual budget requests.

1.3 Audience: In FY 1978, TVOntario provided programming for K-13 (elementary/secondary) instruction (22% of total annual channel-hours); for higher education instruction (4%); and for the "open sector" (public) audience (74%).

1.3.1 K-13 Audience: During FY 1978, TVOntario provided 25 hours/week of elementary instructional programming during the school year, to virtually all of the province's 3,969 elementary schools, with 54,800 teachers and 1.3 million students. TVOntario also provided five hours/week of secondary ITV during the school year, to the province's 630 secondary schools, with 35,000 teachers and 612,000 secondary students enrolled. Utilization figures indicate that a total of 853,360 K-13 students were enrolled in regular ITV broadcast use in the classroom, representing 45% of the provincial total K-13 school enrollment of 1,912,000 students.

1.3.2 Higher Education Audience: Three higher education ITV courses were aired on TVOntario in FY 1979, the first college level credit courses broadcast. Student enrollment figures are unavailable (see Section 8.2).

2.0 Organization:

2.1 Networking: OECA distributes instructional and public television programming through its own network and arranges for additional delivery by independent broadcasters, the CBC, and cable TV operators. OECA also designs and coordinates production.

2.2 Organizations with Province-wide Purview:

2.2.1 Ministry of Education (MOE): The Ministry (Department) establishes ITV priorities, provides resources in terms of staff and school curriculum guidelines, and funding. In FY 1978, MOE provided OECA with over $8 million for the acquisition and production of K-13 (elementary/secondary) instructional television materials. All materials acquired or produced must meet the curriculum guidelines established by the Ministry. Ontario has a uniform province-wide curriculum, with a great deal of local school district flexibility in implementation of these standards. MOE annually updates

these provincial guidelines for a designated grade level; in 1979, for example, 7th - 10th (junior high) level curriculum was updated.

The Ministry makes money available to OECA through a joint OECA-MOE liaison commission, co-chaired by the Executive Director of the Curriculum Development Division of MOE and the General Manager of the Corporate Division of OECA. This committee consists of two curriculum officials (one English, one French) from both MOE and OECA, and a business official from each agency.

Block grants are given to OECA by MOE, permitting OECA to develop programs and services established by MOE (see Section 3.1).

2.2.2 The Ministry of Colleges and Universities: The Ministry of Colleges and Universities is the major funding service for provincial colleges (90% funding) and universities (80%). The major relationship between OECA and this Ministry is one of idea-sharing, although over the past two years the Ministry has also provided OECA with $750,000 for the development of three college level ITV courses (see Section 8.2). In May, 1979, the Ministry of Colleges and Universities was merged with the Ministry of Education.

2.2.4 Ministry of Culture and Recreation (MOCE): Major funding for OECA comes from the Ministry of Culture and Recreation (no Alaskan departmental equivalent). In FY 1978, MOCE provided OECA with a budget of $11.3 million, for the costs of general operations, salaries, rent, transmission, and acquisition of "open sector" (public) programming.

2.3 Local Organizations: The Ontario Educational Authority Act provides that "the Authority shall appoint regional councils and advisory committees...to advise it in developing the policy and operations of the Authority."

In 1971, OECA established five regional councils, each including fifteen public members, to serve the five provincial regions: Northwest; Northeast; Southwest; Southcentral; and Eastern Ontario. Members serve for staggered three-year terms.

Each year, nominating committees made up of three regional council members and three citizens at-large fill the five vacancies that occur on each council.

These regional councils are quite active, meeting regularly each four to six weeks. Their responsibilities include: advising OECA's Board of Directors on matters relevant to their region; providing ideas and proposals about local educational television programming; assiting in gauging the local effectiveness of OECA learning materials and services; advising OECA on special learning needs, media requirements, and local program distribution; and maintaining liaison with educational authorities in their regions.

3.0 Management: The Chairman of the Board of Directors of OECA, T. Ranald Ide, is the chief Executive Officer of OECA. Reporting

directly to him are the Executive Coordinator of the Board of Directors; the Manager of Internal Audit; and the Executive Director of OECA.

The seven divisions of OECA are:

The Educational Media Division, responsible for utilization, program acquisition, production, and scheduling for both the "open sector" (public) and the schools;

The French Division, responsible for production and utilization of French language broadcasts;

The Operations Division, including traffic, engineering, purchasing, marketing, and personnel;

The Corporate Division, responsible for the legal affairs of OECA, along with institutional, corporate, and regional relations;

The Finance Division, which handles accounting and budgeting;

Information Services, handling advertising and public relations, graphics and print materials, and editing "TVO Plus", a TV Guide for Ontario;

Research and Planning, which conducts utilization research, project research, and long-range planning and development.

3.1 Purchase/Produce Decisions: The Ministry of Education (MOE) establishes curriculum priorities and guidelines for all province K-13 schools through a series of meetings of Ministry staff, with local educators' input through regional educational committees. This overall curriculum is revised regularly; this year, for example, MOE has studied and revised 7th-10th (jr. high) level curriculum, and established a high priority on the teaching of French as a second language at the secondary level.

MOE provides its curriculum guidelines and priorities to OECA, in addition to an annual funding grant. OECA is responsible for acquiring or developing ITV materials within this budget, for the prioritized curriculum needs.

To coordinate with MOE, OECA develops a five-year long range planning document, updated annually, indicating the curriculum planning trends of the province. In addition, OECA works directly with the teachers' associations that have been formed by subject areas (i.e. history, science, etc.). These teachers' associations are very organized and active on the secondary level, slightly less so for elementary grades. Each association nominates three members to work with OECA for a term of one year. Through these representatives, OECA's Division of Research & Planning conducts an ascertainment survey to determine where teachers need help, and to propose ways in which instructional television could provide assistance.

Once needs have been established through ascertainment, an ad hoc curriculum committee is created, consisting of teachers from an (subject area) association, and OECA staff. This committee is headed by one of OECA's three (early childhood, teacher education,

or school and youth) superintendents, within the Educational Media Division. This committee surveys everything available in pre-recorded ITV series, and develops a relevance table.

OECA's Director of Acquisitions keeps informed of programming available in Canada, Europe, and the U.S., and suggests programs to be considered, receives all program ideas or script concepts, and forwards both program and production suggestions to OECA staff and the special curriculum committees for their comments and decisions. The Director of Acquisitions works closely with the curriculum committees as they develop their (by subject) relevance table.

If it is then determined by the committees that available ITV materials will not meet the province curriculum guidelines, priority areas, or identified needs, a project leader is appointed the responsibility of drawing together a production team.

3.2 Production Procedure: The project leader (a television producer) puts together a production team, including an instructional designer, an editorial specialist, and a researcher/evaluator. This team will work with advisory groups, subject specialists (generally drawn from the teachers' associations), and consultants (particularly if the intended production contains specialized content). This production team retains responsibility for accomplishing a finished ITV series production.

OECA has worked hard to overcome the problem of production needs versus instructional needs. The majority of their TV producers and project leaders have an educational background, and were then trained in production. The education-experienced producer retains final authority, as project leader, for each team's work and the finished programming. Extensive formative research is also conducted for each series, emphasizing learning methods and techniques appropriate for mediated instruction in the intended series subject.

Because Toronto has extensive production facilities, OECA maintains only a small studio. Most OECA productions are performed on contract by outside production companies, overseen by OECA's project leader.

3.3 Scheduling Decisions: OECA makes all final network broadcast scheduling decisions. "Open sector" (public) program scheduling is based on carefully analyzed audience and market research available to the broadcast industry. ITV schedule decisions are made with the advice of the teachers' associations in the province, and the five regional (educational) councils established by OECA (see Section 2.3).

4.0 Network Configuration:

4.1 Technology and Service: TVOntario's broadcast network consists of a single-channel microwave link to nine transmitters throughout

the province. All broadcasts originate at TVOntario (channel 19) in Toronto. Repeater transmitters are located in: Ottawa, Kitchener, London, Chatham, Windsor, Sudbury, Thunder Bay, and Sault Ste. Marie.

In areas not served by one of these transmitters, OECA purchases time from a total of twenty-two commercial local television stations. A five-hour/day program package is also made available to nine cable television systems in remote locations, with earth stations receiving CTS and/or Anak B satellite transmissions. In addition, a total of 180 local cable stations within Ontario carry TVOntario as one of the channels offered subscribers.

OECA has 300 full-time employees, and hires about 100 additional contractors per year.

4.2 Implications for Local Scheduling: TVOntario has a uniform, network-wide single-channel broadcast schedule. Since the province is within a single time zone, all ITV scheduled for in-school use corresponds to the school day of all provincial public (K-13) schools.

During the school year, five days per week, elementary ITV programs are scheduled from 9:00-Noon, and 1:00-3:00 pm. Afternoon programs are repeats of the morning programs, to allow more flexibility in program use. One-half hour per day is French language programming. Because of the difficulties of synchronizing secondary school programs with class schedules, TVOntario does not broadcast secondary ITV programs during school hours. Between 3:00 - 4:00 pm, all secondary programs are broadcast to allow teacher preview, as well as off-air taping for later classroom use.

TVOntario also offers Videotape Program Service (VIPS), providing ITV programs on videotape, for a user fee. This service makes programs available to teachers on demand (see Section 7.0).

5.0 Programming: A total of 60% of TVOntario's instructional and "open sector" (public) programming is produced by OECA, with 40% purchased in pre-recorded form.

5.1 Purchase: TVOntario has purchased programs from the Public Broadcast Service (PBS), Children's Television Workshop, the British Broadcasting Corporation (BBC), as well as other British producers (ITV). Forty percent of all TVOntario programming (public and instructional) is purchased in pre-recorded form; 17% of these buys are French language programming produced in France.

5.2 Production: TVOntario produces K-13 instructional, "open sector" (public) programs, and a limited amount of higher education instructional programs (see Section 8.2), and has co-produced a number of programs with other educational television producers in Canada and the United States. Overcoming original commercial broadcast opposition to the creation of a public broadcast network, TVOntario frequently co-produces programs with commercial broadcasters in the province. Sixty percent of all programming aired on TVOntario has been produced by OECA, which has an average annual production budget of $11 million.

6.0 Utilization Services: OECA's utilization director considers the quality of ITV programs, not their quantity alone, as critical to utilization success in the schools. Utilization staff work closely with OECA's research division, to document utilization needs and patterns, and match utilization services to those needs.

It appears to be a not necessarily frustrating maxim with OECA utilization staff that it takes from five to six years to initiate, develop, and realize any direct impact in the schools as the result of any individual ITV series. Staff are also well aware that the personalities and priorities of school administratiors directly effect utilization efforts and ITV success; OECA research has further helped to identify specific aspects of this attitudinal impact.

OECA allocates about 7% of its total budget to utilization services, at an expense of $1.6 million in FY 1978. The majority of these expenses covered print materials development, and in-service training.

TVOntario has, however, provided some diverse and rather unique utilization services. Ontario residents, excited by new ideas or subjects introduced to them through TVOntario, have requested workshops to follow-up broadcast programming, which has provided them a resource not usually available, particularly in rural areas. During the airing of a controversial series "The Jesus Trial," for example (see Section 10), TVOntario provided material for interest groups wanting to dialog about religious intolerance (a particularly volatile issue in Canada).

As one OECA management official stated TVOntario's philosophy: "We believe that television should encourage viewers to do other things - become involved in groups, trot down to the library for a book or two, get riled and find someone to talk about it with. Sitting at home in the dim blue flicker, aimlessly switching channels, nobody is going to learn very much from even a phenomenally good program. The grassroots approach we favor turns all that around...TVOntario wants active viewers, not passive."

6.1 Print Materials: OECA distributes a variety of print materials to publicize its ITV and "open sector" (public) schedules, at no charge, as well as individual series guides for ITV. (Some print materials are also available in French.) OECA's extensive staff support for print materials development prepare all materials for OECA-produced series; additional magazines, anthologies and books developed to support OECA productions are available for costs ranging from $1.50 to $4.00.

A planned addition to series' print teacher guides is a minute-by-minute program log for each program in an ITV series, detailing the topic or lesson of all program segments. This detail will be particularly useful for teachers using ITV programs on videotape (non-broadcast), where immediate playback would be possible to reinforce the learning lesson.

In FY 1978, approximately 200,000 pieces of print material were distributed within the province by OECA, at a cost of $500,000.

6.2 Reception Equipment: All reception equipment, including TV monitors and videotape recorders, are the responsibility of the local school districts. Many district media centers have negotiated group buys or lease/purchase arrangements to reduce equipment costs.

At the start of the Videotape Program Service (VIPS) by OECA (see Section 7.0), many schools had only 1/2" videotape equipment. OECA then offered school districts a lease plan for 3/4" videocassette record and playback equipment, to permit use of the 3/4" cassette format of VIPS. Equipment leasing from OECA is no longer available.

6.3 Teacher In-Service Training: Based on the realization that interested, committed teachers are the key to successful use of instructional television in the classroom, OECA utilization staff provide support services for teacher in-service training in the use of ITV in the classroom, and information on the programming offered by TVOntario and OECA's Videotape Program Service (VIPS) (see Section 7.0).

OECA utilization staff work directly with district audio-visual coordinators, at regional district media centers. These a/v coordinators serve as "stringers" for OECA staff, providing liaison with teachers and conducting training with their own district staff. Frequent on-site in-service sessions by OECA staff are no longer held, due to their cost ineffectiveness; most direct teacher training is now handled regionally. Utilization at the building level is conducted by building librarians.

Some district media centers have developed extensive utilization training procedures; others are less active. Teachers do still rely on media center film collections, in addition to direct ITV broadcasts. Most district media centers provide their schools with videotape services, through OECA's Videotape Program Service.

OECA previously used ITV programming about using media in the classroom as part of its teacher training efforts; these programs are no longer used because their poor quality made them ineffective with teachers.

7.0 Special Services: OECA's goal is to get "double use" from each ITV program, and in addition to on-air broadcast, OECA offers schools the Videotape Program Service (VIPS).

VIPS provides low-cost videotape copies of instructional programs to educational institutions (schools, school districts, public libraries, and nonprofit educational agencies) in the province. Tape program dubs are provided on 1/2" video cartridge or cassette, 3/4" videocassette, or 1" open reel, at a charge of $11.00 for up to 30-minute length programs, and $22.00 for 31 to 60-minute length programs. Schools and district media centers outside the range

of TVOntario's transmissions can obtain program tapes for the reduced rates of $4 and $8, respective of length. OECA also supplies blank tape stock for dubbing at a low cost.

OECA has predicted that this tape service could be available to home viewers in the 1980's with programs available through index display on home screens, for a charge of about $10/month. This service could be provided through extension of OECA's existing Access-Index Project, a computerized system describing and classifying all OECA programs; available now to Ontario residents through public libraries, this computerized index would permit home on-screen selection of tapes available for home viewing. OECA has also been experimenting with Teletext, a system already in use in Great Britain. Teletext enables a broadcaster to transmit hundreds of pages of print information on unused lines (at the top of the regular television 525-line picture), without interfering with the regular programs. Using an inexpensive decoder, subscribers could turn to this service by push-button.

OECA is also looking at the possibilities of Viewdata, a fiber optics telephone system that provides electronic newspapers and interactive television, with computerized learning systems.

8.0 Other Users:

8.2 Higher Education Users: Throughout its existence, OECA has maintained close relationship informally with the Ministry of Colleges and Universities in matters of policy coordination (see Section 2.2.2). Once OECA has established its solid basis in K-13 instructional television, formal talks began between officials of both agencies to explore the ways in which OECA could deliver higher education instructional programming.

Many of the province's colleges and universities were enthusiastic about the possibility of courses being offered through TVOntario. Opposition came principally from institutions that had already established extensive media centers, and were unwilling to have TVOntario competition; and from professional suspicion of the new technology by those who saw the entry of TVOntario as a threat to traditional higher education.

TVOntario also had some reservations about offering higher education instructional programming, primarily due to the specialized nature of the subject matter. Consequently, TVOntario has taken the stance that any instructional programs they produce and offer for the higher education market must be suitable for the "open sector" (public) audience.

Given these factors, the Committee on Post-Secondary Educational Programs was formed, a 12-member group including staff from OECA and the Ministry of Colleges and Universities. This committee has coordinated the development of three higher education courses produced by OECA and aired on TVOntario, beginning this year.

The Ministry provided a total of $750,000 for this course development and production. (For description of OECA's production procedures, see Section 3.2.)

Neither OECA nor the Ministry anticipate expanding this level of higher education programming. It may develop that OECA telecourse production for closed circuit use may be more appropriate, allowing more in-depth content necessary for many courses, given the assessment by the Ministry that Ontario is not yet ready for anything like Great Britain's Open University.

It should be noted that the Ministry of Colleges and Universities was merged with the Ministry of Education (see Section 2.2.1) this year. What effect this merger may have on televised higher education programming cannot be ascertained at this time.

9.0 Cost Data: All data given in this section represents Canadian dollars.

The total capital investment by OECA to date is approximately $17 million.

(Student enrollments are not yet available for FY 1979; in order to calculate per student costs in a consistent manner, the FY 1978 OECA budget has been used, in conjunction with available FY 1978 student enrollments.)

Sources of OECA Funding (FY 1978)

Ministry of Education	$ 9,000,000	
Ministry of Culture & Recreation	11,300,000	
Program Sales;		
Cooperative Funding Grants (other broadcasters or provincial Ministries)	2,140,000	(Est.)
	$ 22,440,000	
Fixed Asset Purchases	(940,000)	
OECA TOTAL FY 1978 Budget	$ 21,500,000	

OECA FY 1978 Operating Budget Breakdown

Program Production	$ 13,444,800
Utilization & Print	1,558,500
Broadcast Distribution	2,309,000
Non-Broadcast Distribution	848,700
Program Services (Research & Eval.)	680,700
Advertising	645,900
Administration	2,011,000
TOTAL	$ 21,498,600

9.1 K-13 Cost Data:

FY 1978
Estimated OECA Support for ITV (K-13)

Service Categories	Total Budget	% Applicable to ITV (est.)	ITV TOTAL
Program Production	$ 13,444,800	50%	$ 6,722,400
Utilization & Print	1,558,500	50%	779,250
Broadcast Distribution	2,309,000	22%	507,980
Non-Broadcast Dist. (K-13)	848,700	46%	390,402
Program Services Research, Evaluation	681,700	50%	340,850
Advertising	645,900	22%	142,098
Administration	2,011,000	22%	442,420
Est. OECA TOTAL ITV (K-13)			$ 9,325,400

OECA spends an estimated $10.93/ITV enrolled student/year, based on the estimate that 853,360 K-13 students are regular viewers of ITV courses; or $4.88/student/year for each of the 1,912,000 K-13 students in the province. This total expenditure of (est.) $9,325,400 for ITV represents approximately 0.47% of the province of Ontario's total FY 1978 education budget of $2 billion.

9.2 Higher Education Cost Data:

FY 1978
Estimated OECA Support for Higher Education ITV

Service Categories	Total Budget	% Applicable to ITV (est.)	ITV TOTAL
Program Production			$ 750,000*
Broadcast Distribution	$ 2,309,000	4%	92,360
Non-Broadcast Dist.	848,700	4%	33,948
Advertising	645,900	4%	25,836
Administration	2,011,000	4%	80,440
Est. OECA TOTAL ITV (Higher Education)			$ 982,584

* Special three-year grant from the Ministry of Higher Education for initial development of higher education ITV; this Ministry has now merged with the Ministry of Education.

No student enrollment figures are yet available for higher education ITV use, as the three available courses are now being offered for the first time on TVOntario.

9.5 Total Population Cost Data: OECA spends an estimated $2.59 (based on FY 1978) for each of the 8.3 million residents of Ontario.

10.0 Comments: Canadians are sensitive about what they perceive to be the United States' "cultural imperialism," and the tendency of Americans to think of Canada as a territory. Canadian commercial television is clearly dominated by American programming.

TVOntario, however, programs 60% of its total broadcast schedule with Canadian productions, which are consistently award-winning and consistently attract and hold a large audience share. The Canadian government has spent large amounts of federal tax dollars (combined with provincial support) for Canadian media arts. One example of this support is the National Film Board of Canada, internationally known for the high quality of its productions, and its emphasis on the visual media as an important tool for cultural understanding and communication. OECA staff freely admit that it is the presence of the large media talent pool in Canada that makes it possible to create the quality productions for which TVOntario is known.

When the province of Ontario created OECA, it was with a strong commitment of purpose, and money, to creating high production value, Canadian-relevant, television programming. TVOntario, as a result, has never allowed itself to be swamped with American products; a majority (60%) of the programming it airs are produced within the province, and are relevant to and reflective of Canadian society (including the French-speaking minority).

TVOntario's stated aim is to become part of the social fabric of Ontario, actively contributing information to and communicating with the residents of the province. TVOntario appears to be well on the way to achieving this goal, and attractive to its audience; TVOntario consistently has viewer ratings competitive with the commercial television stations in Toronto. OECA's formula for success appears to be comprehensive and careful research; innovative and responsive utilization services; sound business practices; competitive program scheduling; aggressive marketing and program publicity; and high production value programming. This formula of success is further evident in the strong continued financial support OECA receives from the provincial government of Ontario.

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Chris Traber, Supervisor
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STATE OF INDIANA

Management & Operations

IHETS is a technical network, providing long-lines transmission of telecourses to its seven member institutions of higher education in the state, primarily connecting main campuses with branch campuses.

Indiana Higher Education Telecommunications System (IHETS): Provides video/audio microwave and long lines interconnects among 92 campus sites, for transmission of higher education coursework. Beginning operations in 1969, IHETS includes seven higher education institutions as members. Division of System Development provides planning, operation, and maintenance of facilities; Division of Member Services provides administration and utilization services. Network services include video network, with teleresponse capacity; teleprocessing for automatic, remote-control video record and playback at all network locations; State Universities Voice Network (SUVON) among all sites; radio network among 13 university-affiliated public radio stations, including AP Audio Service. Staff of 20, with FY 79 budget of $2 million.

Indiana University
Board of Trustees (appointed by Governor) have full administrative and fiscal responsibility for IHETS. Director of IHETS Development coordinates with network staff.

Advisory Council on Policy consists of one representative (usually Vice-President for Academic Affairs) of all seven member institutions. Network policy and operations recommendations submitted to President of Indiana University (and Board of Trustees) through IHETS Executive Director.

Committee on Systems Operations and Committee on Programming also consist of one member institution representative (each), with policy recommendations forwarded to Advisory Council on Policy. Sixteen subcommittees (variable) currently implement policies and initiate program development.

Member institutions are the Universities of Indiana, Purdue, Ball State, Vincennes, and Indiana State; the Indiana Vocational Technical College; and Independent Colleges & Universities of Indiana, Inc. (with 34 participant institutions). Each member institution is responsible for sponsored programming carried by the network, including student enrollments and support services, and any production or administrative costs. Primary use of network provides program origination on main university campus, for instruction at branch campuses. Each member appoints campus representatives for IHETS liaison.

STATE OF INDIANA

Funding
(Based on IHETS FY 79 Budget)

CAPITAL INVESTMENT (Network central; ITFS systems; towers)	Unavailable
Annual maintenance, engineering & operations	$ 1,600,000
ANNUAL COST for Instructional Telecom. Network	$ 2,000,000

Data is not available on the administrative and program production budgets of individual higher education institutions using the IHETS network; participating colleges and universities retain full control and responsibility for programming carried by the network.

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS (FY 78)	ANNUAL COST (Networking) PER STUDENT
Higher Education	31,000*	$ 65.00

*FY 1979 student enrollment data unavailable; according to IHETS staff, FY 1979 enrollments will be comparable to FY 78 figures.

X. STATE OF INDIANA
INDIANA HIGHER EDUCATION TELECOMMUNICATIONS SYSTEM

1.0 Background: The Indiana Higher Education Telecommunications System (IHETS) operates and maintains a comprehensive telecommunications network for higher education program services within the state. IHETS provides no programming of its own, but operates a telephone and data transmission network, a radio network, a closed-circuit television network, and provides telephone circuit buying services (state telepak system) to member institutions. The entire IHETS network utilizes leased long-lines from Indiana telephone companies.

Indiana's colleges and universities have an extensive system of branch campuses; IHETS was established as an economically feasible method of offering specialized college courses to all campus locations. The IHETS network is used by higher education institutions in the state primarily to transmit programs from the main campus of one university to its branch campuses, with a total of 92 receiving sites served.

1.1 History: The concept of a closed-circuit television network for Indiana's universities was initially developed to share an astronomy course offered by Indiana University (Bloomington) with Purdue University (Lafayette). During the 1961-62 academic year, the two universities cooperatively established a television microwave system linking their two campuses, and their branch campuses in Indianapolis (the major population center of the state).

During 1965-66, two separate moves began, which culminated in the forming of the Indiana Higher Education Telecommunications System (IHETS). Purdue University contracted with consultants Jansky and Bailey (also responsible for consultation design of Ohio's ITV system), for an extensive evaluation of the University's television system with an eye toward future development. Ball State, Indiana State University, and Indiana University joined this study.

Secondly, five local governments in the state were urging the General Assembly (legislature) to create new medical schools in their municipalities; however, studies conducted by Indiana University revealed that the most pressing need was for improving graduate education for physicians already in practice.

Representatives from Ball State, Indiana University, Indiana State, and Purdue developed proposed legislation seeking funds to begin a shared telecommunications system utilizing facilities leased from the existing telephone companies in the state.

The 1967 legislature approved both proposals, passing the Indiana Telecommunications Act, and the Indiana University Medical Plan. The first appropriation of $600,000 provided an interim budget to the Higher Education Telecommunications Fund to begin the development of the IHETS inter-city networks and connections to the member post-secondary institutions. A portion of the Medical

Plan's appropriation of $2,500,000 was used to connect hospitals and clinics to the IHETS video network. The fully-switched video network began operations in 1969.

Originally, the General Assembly had authorized Indiana University to be the fiscal agent for IHETS, and had directed the state universities to establish a coordinating unit to plan and administer the proposed system. The state universities set up the State University Telecommunications Coordinating Council (SUTCC) to devise and implement a plan, subject to approval of the Boards of Trustees of the IHETS member institutions. A representative of Indiana University's School of Medicine was added as an ex-officio member to SUTCC because of Indiana's recognized need for mediated medical education.

From 1971-73, IHETS' original enabling legislation was amended several times, to allow for the addition of other college and university members, including the Independent Colleges and Universities of Indiana, Inc (ICUI, Inc.), an organization of 34 institutions; IHETS was no longer devoted exclusively to state affiliated institutions. The addition of ICUI, Inc. (counting as one member), brought IHETS membership to seven institutions representing 71 main and regional campuses.

During SUTCC's first two years, the major emphasis was on hardware acquisition and system construction. This involved extensive coordination with vendors and state telephone utilities, which set up an inter-company coordinating committee representing engineering, marketing, plant, and traffic divisions to facilitate this system installation.

By 1972, the basic hardware was installed and operating, and the administration of IHETS was restructured to place system governance closer to the day-to-day administration of Indiana post-secondary education. This restructuring also brought a shift in emphasis away from technical concerns and towards curriculum and utilization. Under the new structure, approved by the Boards of Trustees of IHETS' seven member institutions, IHETS would have its own Board of Directors, composed of one high ranking administrator from each of the seven members. The IHETS Board of Directors was empowered to determine policy, administer the system, and commit institutional funds to cooperative projects. SUTCC continued to advise both the IHETS staff and the new Board of Directors.

In time, the IHETS Board of Directors proved to be a very unwieldy structure. For example, each year the IHETS budget had to be approved by the Board of Trustees of each member institution. Consequently, in 1977, the General Assembly created a more efficient administrative structure for IHETS, placing responsibility for the multi-institutional network within the jurisdiction of one member, the Indiana University Board of Trustees. The IHETS Board of Directors and SUTCC were no longer needed, and were disbanded. Members would serve as policy advisers through a new advisory group (see Section 2.2).

1.2 Governing Body: The 1977 General Assembly of Indiana placed administrative and fiscal responsibility for IHETS with the Board of Trustees of Indiana University, who are appointed by the Governor. Thus, the IHETS system which serves over 40 colleges and universities (each with its own governing body) was placed entirely under the jurisdiction of one member institution's governing body.

The Indiana Board of Trustees created the Advisory Council on Policy, with a representative from each member institution (usually the Vice-President for Academic Affairs, or other high administrative officer). Although the Council is responsible to the Trustees, their recommendations are made formally through the Executive Director of IHETS, to the President of Indiana University.

1.3 Audiences: The intended audiences for IHETS programming are the on-campus students of all member institutions and their branch campuses, with programming for both graduate and undergraduate credit.

1.3.2 Higher Education Audiences: IHETS served approximately 31,000 students in FY 1978, through a variety of credit and non-credit courses transmitted by the network. All courses were offered through the auspices of one or more of IHETS' member institutions.

1.3.3 Continuing Education Audiences: The preamble of the IHETS enabling legislation speaks of "extending and continuing education... to update, re-train, and otherwise bring rapidly advancing knowledge to those who need it in their daily pursuits." To honor this mandate, IHETS members have provided classes for clergy, dentists, engineers, farmers, journalists, nurses, nursing home administrators, orthodontists, pharmacists, physicians, public relations personnel, real estate salesmen, speech and hearing specialists, teachers, university administrators, univeristy physical plant personnel, and veterinarians.

Indiana University offers a formal course designed to prepare students for the Indiana Real Estate Salesman's License Examination, annually enrolling between 4-5,000 people throughout the state. Butler and Purdue Universities Schools of Pharmacy jointly produce weekly seminars for in-service training for practicing pharmacists. Indiana University's School of dentistry provides continuing education for orthodontists, and a class in oral histology and embryology.

A significant portion of the video network programming originates from Indiana University, and its extensive medical education resources. Through the use of ITFS (see Section 4.1), or a cable TV channel available in hospitals, clinics, offices and homes for convenient viewing by professionals, IHETS provides ongoing professional training with instructional TV.

1.3.4 State Agency Audiences: When organizations other than IHETS member institutions request time on the network, it is

generally made available, with the only charge for out-of-pocket costs that may be necessary. IHETS has assisted several state agencies develop programs. Weekly public service programs produced by the Indiana Department of Natural Resources, and the Indiana Museum of Art, are provided to P/ETV stations, and IHETS members.

2.0 Organization:

2.1 Networking: IHETS provides all technical, scheduling, switching, or other electronic interconnection necessary to transmit the instructional programming requested by the participating colleges or universities. The IHETS network connects 92 campus sites in the state.

2.2 Organizations with Network-wide Purview:
Member institutions provide input to the IHETS Executive Director and staff through participation on two standing committees: the Committee on Systems Operation, and the Committee on Programming.

IHETS Executive Director. In instances where committee recommendations require policy decisions, they are forwarded to the Advisory Council on Policy. Each IHETS member institution has one representative on each of the two standing committees.

The work of bringing ideas to reality is handled by subcommittees, who are responsible for implementing proposals generated by the standing committees, as well as to devise or generate proposals of their own. These subcommittees are small, task-oriented groups, including appropriate resource persons for specific project planning. IHETS staff, university faculty, consultants, and production specialists all serve on one or more of the subcommittees, which can be created in relatively informal fashion simply by consent of a standing committee and its chairperson. The purpose of these numerous working subcommittees is to encourage the inter-institutional exploration of as many subjects as practicable for course development for IHETS delivery.

At present, 16 subcommittees are functioning, in the areas of: aerospace education, continuing education, family life, librarians, network coordinators, occupational safety and health, public broadcast programming, public information, radio stations, satellites, special education, teacher education, television production, television system scheduling, voice network, and women's projects.

2.3 Local Organizations: Each institutional member of IHETS is responsible for coordinating IHETS utilization on each main or branch campus. Each member also coordinates its liaison with IHETS through its own governing body (Board of Trustees). IHETS member institutions are: Ball State University; Indiana State University; Indiana Vocational Technical College; Purdue University; Vincennes University; and the Independent Colleges and Universities, Inc. (with 34 member institutions).

3.0 Management: Administration and operations are conducted by IHETS' professional staff, headed by the Executive Director, with the support of the Director of IHETS Development (appointed by the President of Indiana University), and the support of the Advisory Council on Policy (see Section 1.2).

The current Executive Director has held that position since 1972, previously serving as chairperson of SUTCC's Program Development Committee (see Section 1.1). IHETS staff consist of two divisions. The Division of System Development handles the planning, operation, and maintenance of the system's telecommunications facilities. The Division of Member Services provides utilization services to member institutions, and general administration. According to the IHETS organizational chart, both divisions report to the Executive Director; in practice, the Executive Director also serves as the Director of Member Services (see Section 6.0).

3.1 Purchase/Produce Decisions: There is no formal purchase/produce procedure for IHETS programming. Each member institution is responsible for producing its own programming, which is generally prepared at the main campus, for distribution to branch campuses.

Programs may be prepared through institutional cooperation, based on course ideas introduced by an IHETS subcommittee (see Section 2.2). In such cases, interested institutions will pool money and resource faculty, to develop the course cooperatively. Production procedures in these cases would be determined by the participating (and funding) institutions.

3.3 Scheduling Decisions: There are no established priorities for determining program scheduling. All member institutions are requested to submit their programming requests for the upcoming semester by a certain cut-off date. The Committee on Programming (see Section 2.2), with members from each institution, then develops the semester's schedule. Where conflicts arise, the individual institutions involved negotiate and develop a compromise schedule. With the semester schedule determined, requests received after the cut-off date are included, as much as possible.

4.0 Network Configuration:

4.1 Technology and Service: The IHETS video network consists of: microwave radio transmission paths, switching equipment to handle long-lines transmissions, ancillary equipment to monitor and control the operation of the network; cable channels; and a series of ITFS installations located at the state's major population centers.

Simultaneous video transmission from, and reception by, nine locations are provided by the long-lines system; seven universities, one P/ETV station, and IHETS Central can use this network simultaneously. Three of the university sites can originate two video programs from the same, or different, points concurrently. All other locations (of 92 site total) can receive one channel.

Switches at six locations around the state (computer-controlled from IHETS Central) allow the video network to be quickly and easily reconfigured to meet program transmission needs from hour to hour (in effect creating several closed-circuit mini-networks, connecting two or more specific sites). Closed-circuit transmissions are provided by microwave, or by contract with local cable companies (requiring a special receiving converter).

IHETS also currently operates nine ITFS systems. The transmitters are connected to IHETS Central, and are automated (turned on or off, and monitored) by technical system designed by IHETS. Two additional ITFS systems are under construction.

All IHETS receiving sites have teleprocessing equipment (see Section 7.0) to allow programs to be transmitted to a site before the program is actually needed. Stored on-site, the program can then be shown automatically when activated by a signal from IHETS Central. This capacity for storage improves system efficiency, lessening the system load during peak demand hours.

In addition to the daily program originations from network sites, continuing education programs are increasingly transmitted by satellite, via NASA or public broadcasting facilities, to IHETS Central, then on the network.

For the FY 1979, IHETS had a budget of $2 million; facilities operation accounted for $1.6 million of that total. IHETS has a staff of 20, with twelve assigned to the Division of Systems Development, and eight to the Division of Member Services.

The majority of the IHETS system is leased. IHETS has made capital investment in towers, where the state telephone utilities were unwilling to make the investment (a total of $200,000); and in ITFS systems, currently owning eleven (and constructing two more). IHETS has also purchased other miscellaneous equipment, but a precise total capital investment figure was not available.

4.2 Implications for Local Scheduling: Since IHETS operates a multi-channel system, and rarely transmits the same program to all receiving sites, two or three programs are typically transmitted simultaneously. Through the additional flexibility provided by the teleprocessing (tape delay) capability (see Section 7.0), the majority of scheduling conflicts can be readily resolved.

Given the technical flexibility of the IHETS network, and the pre-semester planning by faculty and administrators, member institutions can almost always have a transmitted course available to students at the desired time and place.

5.0 Programming: IHETS has no production facilities of its own, nor does it produce any programs. Production is the responsibility of the member institutions, many of whom have extensive production facilities.

The majority of the traffic on the video network consists of classes conducted at the main campus, and extended to branch campuses by the network. These instructional courses usually are in a mediated classroom format, much life teleconferencing, providing two-way audio with the video transmission, for questions or discussion. The IHETS participating universities have been able to use this format quite successfully, because all courses offered for credit use the teleresponse system (see Section 6.0).

IHETS has actively encouraged conference groups and inter-institutional cooperation in program production. Where appropriate, IHETS has provided production expertise. Cooperative productions for credit courses such as "Non-West Studies" (teacher in-service), "Family and Consumer Law" (for persons entering the social service professions), and a host of non-credit courses, programs, or workshops have resulted from this IHETS involvement.

Institutional cooperation has produced courses for which the need was undeniable, but for which no single campus or university could project an enrollment large enough to make such development economically feasible. In some cases, the universities have sought outside grants to assist production financing. Programs produced as the result of this institutional cooperation have generally enjoyed a more sophisticated level of production than those funded or produced by a single institution.

Purdue University uses IHETS extensively to transmit graduate engineering courses. Both associate degree programs, and Schools of Nursing use the network for their coursework. In some cases, where one school offers a very specialized course (such as "Stellar Astronomy"), it is shared with other colleges and universities through network transmission.

Because many P/ETV stations in the state are located near IHETS reception sites, Indiana University has begun purchasing high production value programs from major ITV producers (University of Mid-America; Media Five) to broadcast via open broadcast, for credit for either on- or off-campus students. Such open broadcast of telecourses for credit for at-home students via the state's P/ETV stations is still a relatively new offering of many member institutions of IHETS. Those sponsoring these open broadcase courses are still experimenting to find the most effective means of student tracking and outreach.

6.0 Utilization Services: In 1975-76, IHETS utilization was strengthened by the appointment of a campus representative to IHETS, for each campus on the network. These campus reps coordinate all activities between each campus, and the IHETS staff. IHETS' Member Services Division, in particular, works closely with the campus representatives, providing them with information about system activities, programs, and services. Division staff travel to all campuses, informally meeting with these campus coordinators.

An annual meeting of all campus coordinators is also held, at IHETS Central offices.

The Member Services Division of IHETS is responsible for keeping all member institutions informed of network services, and for responding to all member requests for additional services. The division provides an inventory of televised instructional materials available; assistance in defining needs and establishing conference groups to coordinate cooperative institutional program planning and production; development of new system channels among members; coordination of group memberships in libraries of taped instructional materials (national) for participating universities; organization of workshops for campus IHETS coordinators; information on upcoming commercial and public television specials of educational significance; coordination with public and commercial television stations in the state, to strengthen their relationship with IHETS and encourage broadcast of instructional programming for member institutions; and assistance in developing and implementing procedures for determining enrollment and attendance for programming carried on the network.

The current Executive Director of IHETS, Dr. Jane Richards, has chosen to head the Member Servicies Division in an effort to be as close as possible to IHETS clients. Without this contact, it is felt that particularly the larger university members (Indiana University and Purdue University) would de-emphasize division services. While the larger member institutions have the resources to provide their own utilization services to faculty and students, the smaller institutions are in need of the support services that this IHETS division offers.

The Division of System Development provides in-service training on the use of network equipment, which becomes increasingly important as IHETS incorporates increasingly sophisticated equipment into the system.

Direct utilization and support services to students are the responsibility of each sponsoring institution. Students are enrolled by and receive credit through standard university procedure. In most cases, students will attend each class at the university's network facilities location, on-campus.

IHETS provides opportunity for student-video instructor interaction through its teleresponse system, providing portable, self-contained units that can quickly and easily be set up in classrooms to provide two-way audio communication for live program instruction. This system was developed to replace the dial-up phone system supplied by the telephone companies, that had operated since 1969. The dial-up lines proved cumbersome, with long delays in reaching instructors. The present teleresponse system relies on dedicated inter-city telephone lines, connected for direct and immediate contact. Although most classes do not have a high volume of questions during a single class period, this available option has been observed to be extremely important in removing the distance between student and instructor, and particularly significant at the graduate level.

7.0 Special Services (beyond video broadcast services): IHETS, working with long-lines carrier Indiana Bell, provides a number of services in addition to the network's video broadcast and teleresponse systems.

To meet the problem of peak traffic usage of the video network, IHETS developed its teleprocessing system, with the capability to automatically record, at the receiving site, any video program transmitted on the network that need not be "live." An encoder at IHETS Central, under control of a microprocessor, generates signals capable of addressing any individual decoders at any network location specified, remotely operating any video recorder. Similarly coded signals are constantly transmitted by all (modified) video recorders on the network to the central IHETS teleprocessor, to indicate the operating status of each machine at all times. The entire control system is automated, with all units at user locations designed for unattended operation. The recorded programs are then played over the local video distribution system at the locally-required times, automatically, operating on signals from IHETS Central.

State Universities Voice Network (SUVON) is a telephone network interconnecting all IHETS member universities, both main and branch campuses, through 300 inter-city telephone circuits. SUVON is capable of carrying any type of signal that can be transmitted over standard telephone circuits, including facsimile, teletype, and slow-speed data, although its primary function remains voice communication. SUVON's tie lines and off premise stations connect 71 campus switchboards through a central switching system. The individual circuits making up SUVON's network are leased from the state's telephone companies through Indiana's Shared-Usage Telepak System.

A "telepak" is a fixed group of circuits between two cities, priced at a flat rate for the unit. The Shared-Usage Telepak System facilitates the bulk-buying of telephone lines, for either voice or digital transmissions. IHETS uses as many of the circuits in a telepak as are required for SUVON and other network purposes, sharing the remaining lines with other users on a pro-rated basis (see Section 8.4). Savings due to this system have already enabled IHETS to add more circuits to SUVON, to implement the teleprocessing and teleresponse systems for the video network, to incorporate a hard copy teletype network, and to establish network services among university-operated public radio stations in the state.

The IHETS radio network links thirteen public radio stations (licensed to and) located on university campuses, through long-lines provided by IHETS. The network permits stations to: exchange locally-produced programs, and one-time features that may include statewide press conferences or interviews with newsmakers; to exchange daily news and feature materials (in addition to a mail exchange of taped programs); and receive the Associated Press Audio Service (if subscribers).

The state's P/ETV stations located at or near IHETS reception and origination campus sites have used the video network to transmit statewide press conferences, coverage of the Indiana legislature, and other timely public programs.

8.0 Other Users:

8.4 State Agencies: The telepak system has attracted users who are not members of IHETS. Individual state agencies and a number of local police departments have joined IHETS in the state's telepak system to reduce their costs for long-lines computer connections. In many cases, these agencies and institutions could not have afforded computer service if required to pay full cost for the leased lines.

9.0 Cost Data: The IHETS network operated on a total budget of $2 million in FY 1978, which identifies the state of Indiana's cost for operating this telecommunications delivery system for higher education. Data is not available on IHETS' member institutions budgets for programming or telecourse administration; in fact, IHETS purposely avoids collecting this data, preferring to avoid any perception of interference in the internal affairs of its member institutions. With total enrollment of 31,000 students in FY 1978, it can be determined that the cost of network operation alone (excluding program costs) equals $65.00/student/year.

10.0 Comments: IHETS is primarily a technical network, with strong ties to the telephone companies that serve Indiana. As a consistent and expanding client of phone circuits, IHETS has been able to negotiate a very favorable rate structure, which in turn has meant a greater range of telecommunications services can be offered by the network.

IHETS has been successful because it has stayed out of the area of curriculum design. The IHETS approach is to offer to its members the transmission facilities that no member institution alone could afford.

The total cost value of the IHETS system is incalculable. The state of Indiana has saved the cost of medical college construction and staffing, while at the same time developing an effective system for ongoing professional training for medical personnel. The state has saved the cost of additional college instructors, and has been able to use existing personnel in a more effective manner. The member institutions have been able to develop and offer courses that no single member had sufficient demand to provide. IHETS has provided the residents of Indiana with a rich higher educational milieu.

It would also appear that the increasing rate of institutional cooperation among IHETS members for course development and production, has established an important strength to the system, with good portents for the future. IHETS is a noteworthy exception to

a national trend of institutions of higher education to have serious problems in cooperatively sharing statewide networks. At the start of network services, each IHETS member institution had complete autonomy over its own course materials. Having had positive experiences independently programming their respective use of the IHETS network, members have now been willing to explore shared production and utilization services.

It would also appear that the IHETS teleresponse system has effectively solved the problem of low production value televised higher education. Early mediated classroom systems employed elsewhere and patterned after a broadcast model (non-interactive) have had very low student completion rates. The teleresponse system option, although not extensively used by students, can be a critical component of telelessons, effectively reducing the psychological distance between student and instructor.

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Indiana Higher Education Telecommunications System:

Mr. James Potter
Director of System Development

Dr. Jane Richards
Executive Director

UNIVERSITY OF MID-AMERICA

Management & Operations

UMA has no campus, students, or technical delivery system, but is a production consortium for higher education multi-media learning packages, with institutional members from seven mid-west states.

University of Mid-America (UMA)
Incorporated in 1974, UMA is an eleven-member consortium, headquartered in Lincoln, Nebraska, producing multi-media (audio/video/print) college level course packages. Member institutions from seven mid-western states are: the Universities of Missouri, Kansas, Nebraska, Iowa, Minnesota, North Dakota, and South Dakota; and the State Universities of Kansas, Iowa, North Dakota, and South Dakota. Each member institution is responsible for course lease or purchase, and distribution (using available state networks or broadcast facilities), as well as support and accreditation of its own students. Eleven higher education course packages have been produced since 1974 (and three are now in production), and have served approximately 8,000 students. FY 78 budget totaled $2.4 million, primarily federal funds.

Total staff of 60 work within the Offices of Academic Planning (initial project development); Course Development (instructional objectives and content); Research; and Marketing. Related organizational management and advisory groups include:

Board of Trustees, with overall responsibility for UMA management, consisting of the President of each member institution (11), and six at-large members.

Executive Council consists of UMA's President, Vice-President, and the heads of each of the four divisional Offices; all project proposals must receive final Council approval.

Academic Council consists of one representative from each member institution, to advise UMA on instructional needs. Campus Advisory Panels are currently being formed within each member institution, to involve faculty in identifying on-campus needs; recommendations submitted to the Academic Council.

National Panel of Advisors includes a (not specified) number of educators, broadcasters, and business interests from around the country, to provide UMA with national perspective, professional contacts, course promotion, and prestige.

UMA's activities also include coordination with a wide variety of universities and colleges, as well as organizations marketing instructional media materials, or managing course delivery systems, on both a regional or national basis.

UNIVERSITY OF MID-AMERICA

Funding
(Based on FY 1978 Budget) *

CAPITAL INVESTMENT		$ -0-
Annual maintenance, engineering & operations		-0-
(Estimated costs per member state		$ 1,000,000)
ANNUAL COST for Instructional Course Development		$ 2,400,000
Course Development	53.3%	
Planning and Delivery System Support	21.5%	
Administration	13.2%	
Research	12.0%	

INSTRUCTIONAL AUDIENCE	ENROLLED STUDENTS	ANNUAL COST PER STUDENT
Higher Education	8,000 (since 1974)	$ 1,097.20 (enrolled since 1974)

* Federal (National Institute of Education) funding ends in FY 79, with FY 80 revenue anticipated to increase through elimination of delivery system support (to member states: $240,000 in FY 79), and increased sale of courses to broader markets.

XI. UNIVERSITY OF MID-AMERICA

1.0 Background: The University of Mid-America (UMA) is now a multi-state consortium producing multi-media college course materials, but exists as a direct result of the state of Nebraska's tradition of positive educational innovation.

Nebraska is a fairly large state, spanning two time zones; the major population centers are Omaha and Lincoln, and the majority of the rest of the state is rural. The University of Nebraska (the only state university) began to serve the educational needs of the rural population (both secondary and post-secondary) with correspondence education in 1909, and began radio broadcasting of instructional courses in 1922. Instructional television broadcasts were added in 1954, when Fretzer Broadcasting, a commercial television corporation in Lincoln, offered channel 12 for the University's use. The corporation operated the channel on behalf of the University until 1956, when the University was able to obtain license to channel 12.

The University of Nebraska demonstrated its commitment to educational television by making this new station's (KUON-TV) administration a separate department, University Television, reporting directly to the Chancellor.

In keeping with the University's tradition of educational outreach to all ages, KUON-TV worked with the state Department of Education (DOE) and Lincoln area schools to attract Ford Foundation grants to offer in-school K-12 programming. When these grants ended in 1960, Nebraska school superintendents formed a consortium, the Nebraska Council for Educational Television, Inc. (NCET), to assess themselves for the continued production and broadcast of instructional television.

That same year (1960), the educational community (NCET and the University) petitioned the Federal Communications Commission to reserve five channels statewide for educational television, and requested the Governor to create a Nebraska Educational Television Network.

In 1961, the legislature approved a study to determine the feasibility of creating a statewide educational television network. Two years later, the legislature received a total blueprint (including needs assessment, technical, fiscal, and programming plan) for a proposed Nebraska Educational Television Network. The legislature responded by creating and funding the Nebraska Educational Television Network Commission.

By 1970, all proposed transmitters and translators were in place, licensed to the Commission except for KUON-TV, which continued to be owned and operated by the University of Nebraska.

The Nebraska Educational Telecommunications Center (Lincoln) was completed in 1971, with 114,000 square feet, equipped with four television studios and furnished at a cost of $3 million; the Center houses seven Lincoln-based ETV organizations, representing Nebraska's total range of educational telecommunications services:

The Nebraska Educational Television Commission, licensee for all public television stations in Nebraska (except KUON-TV, licensed to University of Nebraska).

University Television and KUON-TV, the management and operations of KUON-TV, the "flagship" of the Nebraska ETV network.

Nebraskans for Public Television, Inc., (NPTV) one of the first statewide public television voluntary citizen support organizations in the country. Through annual tax-deductible contributions from members (individuals, families, and businesses), NPTV provides funds for the production, acquisition and promotion of many programs that would not otherwise be available to Nebraska viewers.

The Nebraska Council for Educational Television, Inc., (NCET) formed by Nebraska school superintendents to assess themselves for ITV services. Now provides member schools a unified voice to continue the promotion of improved instruction using television.

Great Plains National Instructional Television Library (GPN), the world's largest distributor of pre-recorded ITV tapes and film series. GPN started with a U.S. Office of Education grant, but is now entirely self-supporting.

Nebraska Educational Television Council on Higher Education (NETCHE), a nonprofit corporation composed of Nebraska public and private colleges and universities. NETCHE has developed close to 700 different television lessons for undergraduate instruction. NETCHE provides specialized individual telelessons to supplement and enhance existing academic courses at member institutions of higher education, and 3-4 lesson sequences providing specialized in-depth examination of various subjects not easily explored in existing courses or classrooms. Although some lessons are transmitted by open broadcast, the majority are "bicycled" to participating members on videotape.

The SUN Project, part of the Continuing Studies Division of the University of Nebraska-Lincoln, offering complete telecourses for credit for continuing education students. (NOTE: As of May, 1979, the Nebraska legislature had omitted SUN funding from the FY 80 budget, although staff will remain for the year.)

The Center began network operations in 1972, transmitting several hours of programming weekly to eleven P/ETV stations throughout the midwest, and was already becoming a multi-state influence.

1.1 History: In the early 1970's, higher education was being challenged to deliver educational services to a broader spectrum of society than had been traditionally served. Colleges and universities were faced with older returning students, those interested in life-long formal learning. Delivery of courses to these students, not necessarily on-campus, called for an innovative, cost-effective approach.

The Chancellor of the University of Nebraska, Darward Varner, turned to educational television, beginning in 1971, to meet this challenge. Jack McBride (then Director of University Television, General Manager of KUON-TV, and General Manager of the Nebraska Educational Television Network) proposed a University of Nebraska Television College. The Chancellor's response was the creation of a study commission chaired by Dr. Wesley Meirhenry, chairman of the University's Adult and Continuing Education division. Three months later, after considering the problems of logistics, budget needs, public relations, and possible release of faculty members to work on telecourses, the study committee recommended the establishment of the State University of Nebraska (SUN). The existing Nebraska Educational Television Network would be the major means of delivering SUN's courses to students.

The presence of an existing broadcast network, and the production capability of the Nebraska Educational Telecommunications Center, was a major reason for U.S. Office of Education (USOE) initial funding to the State University of Nebraska - the SUN project, which preceded the creation of the University of Mid-America.

That same year (1971), USOE awarded what was to become a steady flow of grants (eventually totalling $8 million), first to SUN and then to the multi-state consortium that replaced SUN: the University of Mid-America (UMA). The evolution of SUN to UMA is a direct result of the massive infusion of federal dollars, through first USOE, then the National Institute of Education (NIE). Both federal agencies, USOE and NIE, were interested in research that would identify the characteristics of the client population for an "open university," and the best ways to offer viable educational services to these clients. SUN, and later UMA, became NIE's demonstration project in open learning in the U.S.

At SUN, the emphasis from the beginning was on quality educational services, effectively delivered. However, the demographics of potential students indicated that this innovative system could not be cost-effective within Nebraska alone. In a 1973 site visit, NIE set for SUN the task of expanding into a regional network, to be operational by 1975.

To develop this regional network, SUN staff approached the presidents of the institutions belonging to the Mid-America State Universities Association; all but Oklahoma were interested. Together, they incorporated the University of Mid-America in

1974, with five member institutions: the Universities of Missouri, Kansas, and Nebraska, Kansas State University, and Iowa State University.

UMA's first courses were offered through SUN (within Nebraska) in the fall of 1974, with SUN staff initially administering all aspects of these offerings. UMA began offering courses outside of Nebraska the following fall (1975), as the University of Missouri and Iowa State University followed SUN's example and established in-state university management and delivery methods for ITV telecourses.

1.2 Governing Body: The University of Mid-America is an independent nonprofit corporation governed by a Board of Trustees. Until November 1978, the Trustees were the presidents of the (now) eleven member Universities. In November, the Board voted to add six Trustees-at-large, in order to provide a broader (national) perspective to UMA's projects.

1.3 Audience: The target audience for UMA is the 9 million adults within a seven-state region, plus all adults that can be reached through the national marketing of UMA telecourses. All multi-media courses developed by UMA are for the college level, higher education student. Approximately 8,000 students have enrolled for credit in UMA-produced courses, since 1974.

2.0 Organization:

The UMA consortium has eleven institutional members. The original five members - the Universities of Missouri, Kansas and Nebraska, Kansas State University, and Iowa State University - have been joined by: the Universities of Iowa, Minnesota, North Dakota, and South Dakota; North Dakota State University; and South Dakota State University.

The first paid President of UMA was hired in 1978. (Prior to that time, the presidency was an unpaid position, filled by the Chancellor of the University of Nebraska; day-to-day operations were managed by staff of Nebraska Educational Television.)

2.1 Networking: UMA is neither a network nor a university in the usual sense. UMA has no students, no campus, and no transmission facilities. Each member institution using materials developed by UMA serves its own students through its own distribution system.

2.2 Organizations with Region-wide Purview:

UMA's Academic Council represents the program needs of the member institutions. This group is in the process of reorganization. Previously, the Academic Council had consisted of five persons from each of the member institutions, representing various departments. Under the new organization, the Council consists of only one member from each of the eleven member institutions.

As appointees of their own institutions, members of the Academic Council are not paid by UMA. Work performed in connection with UMA is part of their contract with their home institutions, which also pays the cost for all travel to attend Council meetings.

2.2.4 National Panel of Advisors: Since its inception, UMA has had a National Panel of Advisors to provide a broad perspective and scope to UMA activities, and to provide national contacts.

The National Panel is a loosely collected group, at times numbering as many as thirty members, appointed by UMA's Board of Trustees upon the recommendation of the president, for staggered three-year terms. Panel members have come from business, government, education, and labor, as well as from the governing bodies of UMA member institutions.

The Panel provides UMA with advice from a national and regional perspective; advises UMA regarding educational goals and objectives, as well as financial planning; and provides national contacts and political assistance in furthering UMA's goals. For example, when UMA sought top-quality production staff, Panel members used their contacts to attract professional producers from other parts of the country to UMA headquarters in Lincoln. The major function of the Panel is to lend their prestige to the activities of UMA.

2.3 Local Organization: Each participant member of UMA is responsible for providing UMA courses to students in its own region, using the variety of broadcast outlets or networks that are available, generally on a state-by-state basis. Each member institution enrolls its own students, administers course delivery with available broadcast facilities, and provides its own methods of student support, contact, and accreditation.

UMA's Board of Trustees has recently established guidelines for the reorganization of each member institution's participation. This plan calls for each member to establish a UMA Advisory Panel on its own campus, to provide advice on the institution's delivery of UMA telecourses, as well as serving in a formal advisory role to UMA's Academic Council (see Section 2.2). These Advisory Panels are to meet on their respective campuses as local needs dictate, to provide a focal point for each institution's UMA participation. Membership of the local Panels is to be determined by each institution, although the Board of Trustees has recommended that the President's office, the Academic Vice-President's office, the Dean of Continuing Education, a state UMA delivery coordinator (see Section 6.0), and the faculty be represented on each campus' Advisory Panel.

3.0 Management: UMA's chief executive officer is the President, directly supervising the Vice-President, and Assistants for Public Affairs and Administration. The Vice-President supervises the Offices of Research; Marketing; Course Development; and Academic Planning.

An Executive Council, consisting of the President, Vice-President, and departmental office heads, are responsible for approving all materials development plans, prior to the start of any project production.

UMA employs a staff of 60 people.

3.1 Purchase/Produce Decisions: As part of the recent reorganization of UMA, the following procedure for production has been developed by UMA's President Don McNeil. This reorganization is intended to rectify past organizational and decision-making confusions, and to make more effective use of available resources. (It should be noted that no production has yet gone through this procedure.)

Academic Council representatives (from each member institution) can submit suggestions to UMA staff, recommending program production; submitted ideas are assigned to UMA's Office of Academic Planning, with one of the four staff planners assigned to the potential project. This staff planner will be responsibile for researching the topic, seeking funding, talking with the faculty member(s) making the project recommendation, and supervising the marketing research. When these tasks are completed, the staff academic planner will be responsible for producing a planning document for submittal to UMA's Executive Council (staff).

With Executive Council approval, the project will then become the responsibility of the Office of Course Development. Here, a planning document will be prepared, containing the course outline, treatment, and suggested media. This planning detail is submitted to the Executive Council for final project approval.

3.2 Production Procedures: With final project go-ahead from UMA's Executive Council (see Section 3.1), a national search is conducted for a content specialist, who will be primarily responsible for the subject matter of the course, generally working with the UMA project on leave from a university or college.

Once selected (by staff), the content specialist will be assisted by a Content Advisory Panel, consisting of subject experts from UMA's member institutions, solicited and selected by staff. The function of the Advisory Panel, with member's participation individually negotiated, is to assure content accuracy of all materials. A distinct Content Advisory Panel is to be established for each UMA production project. While intended to be a workable, relatively small group (5-8 people), Panels for complex projects may number as many as 25 participants.

The Content Advisory Panel for a production project is brought together in Lincoln at UMA's expense, for an intensive meeting to fully develop the course outline. During this phase of course development, the Advisory Panel has full responsibility over course content and instructional goals.

With the instructional design and content of the course complete, a production team is established for the project, including an instructional designer, a media (as appropriate) producer, and a print media specialist, who are responsible for completing course production.

Upon completion of course production, UMA's Office of Marketing will send information nationwide to find instructional buyers. Content Advisory Panel members actively participate in this phase, as advocates for the course, lending their names for promotional purposes, and advising colleagues about the course.

Each member institution is kept advised of project status throughout all production phases, through their representation on the Academic Council.

As noted previously, no UMA production has as yet gone through this complete production procedure, although Content Advisory Panels have always been formed and active in course content design. Previous UMA productions have apparently been plagued with a variety of problems, based primarily on unclear definition of roles and responsibilities, and UMA's lack of proximity to major media production centers (see Section 10.0 for further comment).

3.3 Scheduling Decisions: An institutional user obtains a UMA multi-media course (or "package") through one of several lease options, based upon projected numbers of students to be enrolled, and frequency of offering (via broadcast or other means).

It is each individual sponsoring institution's responsibility to make the course available to the desired student audience. These offerings may include scheduling and other administrative decisions for open broadcast, closed circuit transmission, or network feeds, depending on the facilities available, and the intended course audience.

4.0 Network Configuration: Delivery systems for UMA courses are the responsibility of the leasing institutions; delivery options are as varied as the institutions. Some lease materials for closed circuit on-campus distribution. The Appalachian Educational Satellite Project has sponsored satellite broadcasts of UMA materials to its receiving network. Many institutions have leased courses for open broadcast on local P/ETV stations or state broadcasting networks.

Even among consortium members, delivery systems are not uniform. North and South Dakota have statewide interconnected networks, similar to Nebraska's state system; Missouri and Minnesota purchase time from P/ETV stations. The Iowa network provides transmission at no charge, but does not reach statewide. Nebraska delivers UMA courses through SUN (see Section 6.0), which broadcasts via the facilities of the Nebraska Educational Television Network.

UMA has provided centralized financial support to each member institution, to help them develop and to encourage support for statewide transmission systems for telecourse delivery. This support was considered necessary to encourage course utilization, given the varied availability of delivery systems in member states. Through FY 1978, this support was provided on a flat-fee basis to each of the seven states participating in UMA, at the rate of $40,000 per state, for a total cost to UMA of $280,000. For FY 79, funding was based on the level of telecourse activity in each state, dropping UMA's total subsidy to $240,000.

UMA's Board of Trustees recently voted to discontinue this subsidy to members, since these developmental funds are, for the most part, no longer needed now that viable delivery networks exist in all member states. These funds will now be used to expand the cooperation between UMA and its member institutions in the area of program development, largely through greater faculty participation in early course planning and content design.

5.0 Programming: UMA has eleven course packages on the market, with three new major packages ready for national distribution. UMA's produced course materials are designed as integrated multimedia packages, using the medium considered most appropriate or effective for each component of the curriculum. Courses may be limited to or combine television, textbooks, newspaper, or audio components. Individual institutions may choose to use all or part of any course package, and they may revise sections to make them more applicable to their own students, if necessary.

6.0 Utilization Services: Each state participating in UMA has a state delivery coordinator, a full-time equivalent position paid by the member institutions. In a few cases, this state coordinator has a continuing education appointment with a variety of other responsibilities, but the majority of UMA's state coordinators have no other institutional duties. In states with two institutions in the same state belonging to UMA (such as in Iowa), the institutions mutually agree on a single coordinator, housed on one campus.

The range of utilization services offered by UMA members are dependent on the degree of institutional commitment and on the available broadcast or delivery networks. The following example from the state of Nebraska suggests the variety of coordinating tasks involved.

The State University of Nebraska (SUN) is the institution within Nebraska that coordinates delivery of overall ITV services to post-secondary students. This includes arranging for learning centers (non-campus), instructors, availability of texts, testing, recording grades, and collecting fees. The Nebraska Educational Television Network provides long lines and local broadcast services for SUN.

Based on its initial studies, SUN developed a complex system of student outreach. SUN created its own system of learning centers, and used University learning centers and public libraries around

the state for student test-taking, counseling, tape viewing, and meetings with faculty members supervising telecourses or multi-media courses. In addition, SUN provides a statewide WATS (phone) line for students to contact learning centers for course information and contact.

It has been SUN's experience that among students having substantial contact with a learning center, 82% finish any given telecourse with a passing grade; of students with only some contact with a learning center (studying more independently, without significant university contact), 55% earn passing grades. This experience clearly indicates the significance of providing opportunity for student contact in conjunction with mediated course instruction; the degree of student support offered by each institution sponsoring UMA courses varies by institution.

For the last four years, Nebraska has been the only state in the UMA consortium providing direct state appropriations for a student delivery system, but the 1979 state legislature terminated SUN's funding. SUN has never attracted the anticipated several thousand students for its sponsored credit courses; yearly enrollments have averaged 800. Faced with the high cost of maintaining learning centers with full-time staff, and low income from tuition, SUN has failed to become self-supporting (as was originally anticipated).

SUN has been housed for the past two years within the University of Nebraska-Lincoln's Division of Continuing Studies, under the Director of Mediated Instruction. The current Director came to SUN in March, 1979, from the Indiana Higher Education Telecommunications System (IHETS), and is committed to creating a self-supporting post-secondary educational television delivery system for the state of Nebraska. With the recent reduction in funds, SUN staff will work over the next year to see that its coordinating activities are absorbed within the services of higher education institutions and ITV in the state. Students will now use the learning centers established by the University of Nebraska's Division of Continuing Studies (Lincoln); advertising and public relations will be specifically geared to target audiences to attract more students; and a reduced schedule of telecourses will be offered in FY 80.

7.0 Special Services: UMA has experimented with satellite delivery of course materials. In August of 1978, many of UMA's video-based courses were transmitted via the PBS satellite for nationwide preview; any public station with satellite receiving capability could tape off-air, paying for any subsequent course usage. Under the leadership of the new President, UMA is currently looking to a reallocation of resources, to explore additional uses of non-broadcast multi-media technology, such as satellites, video discs, and computers, for course delivery.

8.0 Other Users: UMA's course material is intended for higher educational learning audiences only. While produced materials are most commonly of broader academic interest and

appeal, some may also be appropriate for continuing or professional education.

9.0 Cost Data: UMA's FY 1978 budget totalled $2.4 million, provided primarily through the federal National Institute of Education (NIE):

Course Development:	(53.3%)	$1,280,000
Planning & Delivery System Support	(21.5%)	520,000
Administration	(13.2%)	320,000
Research	(12.0%)	280,000
UMA Budget Total	(100%)	$2,400,000

Additional funding is sought from member (and non-member) universities, foundations, and corporations, primarily to support course development.

UMA estimates that member states are spending approximately $1 million each for their delivery networks or systems, although UMA does not collect this data, and course delivery methods remain the responsibility of participating states and their institutions of higher education.

Although detailed enrollment figures are not available, given the autonomy of each participating institution, UMA estimates that its courses have served 8,000 students since it began operation in the fall of 1974.

The following cost data indicates the total UMA investment in the development of its existing fourteen courses since its inception in 1974:

Total UMA Investment in Course Development

SUN Production Grants (Applicable to UMA series)	$ 125,863
UMA Grants (National Institute of Education)	$ 6,218,000
(Non-NIE sources)	$ 2,433,743
TOTAL UMA investment	$ 8,777,606

Based on this cost data, it can be calculated that UMA has invested an estimated $1,097.20 for each of the 8,000 students that have enrolled in UMA courses, since 1974.

10.0 Comments: The story of UMA is a story of individuals. The University of Nebraska had a far-sighted Chancellor who could envision the use of new technologies for developing open learning systems. Working with Chancellor Darward Varner was Jack McBride, considered by many to be one of the fathers of educational television in this country. Mid-wifing the evolution of UMA from the State University of Nebraska (SUN) was Dr. Jerome Lord of the National Institute of Education (NIE), who had the vision of a multi-state open learning delivery system, and the confidence that SUN could grow into that service.

The original goal for UMA was the production of 50 courses by 1980, a goal now recognized as overly ambitious. UMA's problems have come from the wear and tear on individuals trying to accomplish so much in so short a time, and the great distance (both physical and psychological) between Lincoln, Nebraska, and the major media production centers in the country. From the earliest days, it was obvious that UMA could only attract users by producing high production value (expensive) programming. Such programs would require experienced producer-directors. However, UMA had a great deal of difficulty attracting the quality writers and producer-directors that were needed for such projects; few wanted to live in Lincoln, and early experiences with having scripts written at a distance proved unsuccessful.

Moreover, once UMA was able to attract award-winning professionals, the classic stand-off developed between content specialists, production specialists, and instructional developers, with each group struggling for final decision making authority.

Trapped by the need to produce programs immediately, educational presonnel and production personnel did not build a common vocabulary (a major key to the success of Children's Television Workshop and TVOntario, where "the production people talk like educators, and the educator's talk like production people.") This problem became painfully evident during the production of SUN's first course--"Accounting I" (considered to be their least successful program). Educators asked for a Sesame Street-type show (which can be seen in retrospect as a request for a high production value, engrossing, content-laden show). Production people created a show in the Sesame Street format (fast paced, brief segments, lots of humor). Students rejected this approach to learning a serious topic. Producers argued that they had provided exactly the kind of show requested. Educators were outraged because it was unsuitable for the older adult students.

Although production people and educators are now having an easier time communicating, the question of whether producers or instructors are in charge has not finally been resolved at UMA.

The current approach (and reorganization) is intended to allow more careful assessment of staff management skills, to specify for new

staff that they will be working in a team structure, and determine in the planning stages whether the emphasis for a given project will be on the basis of production value or development of instructional content, whether producers or instructional designers take the lead role.

UMA has been hampered by lack of funds to provide a full-time administration, e.g., until last year UMA's director was also Chancellor of the University of Nebraska; the President was also head of SUN, KUON-TV (University Television division of the University of Nebraska), and of the Nebraska Educational Television Network. It is little wonder that an over-extended staff had communications management difficulties.

Despite these problems, UMA has grown and flourished. Today, UMA enjoys a national reputation, and new challenges. NIE funding ends in 1980, and UMA has to become self-supporting; this change is reflected in the change in emphasis in the area of research.

Originally SUN, and later UMA, had primarily conducted formative research, focused on defining learning characteristics and evaluating delivery systems for open learning. Much of the early federal funding was for research which NIE wanted performed concerning these aspects of open learning systems, in its interest to develop a model which would be usable in other areas. This federally-defined need was not always compatible with UMA's needs; at times it was not clear whether this federal direction was benevolent dictatorship, or in UMA's direct interest. Now that learner characteristics are defined and the delivery systems are essentially in place in UMA's member states, UMA's research efforts are shifting to define target markets. Formative research still plays an important part in assuring product quality control, however.

Looking to the future, UMA is seeking other sources for production funding. These potential sources include other offices of the federal government, and a growing number of private corporations or foundations. Another source of operating capital is intended to be the revenue of increased sales of UMA materials.

One approach that UMA is considering is to have each of their member institutions become agents within their states for all UMA materials. For instance, several hospitals in Minnesota are interested in the closed circuit delivery of UMA's course on metrics. If the University of Minnesota (the state's UMA member) were UMA's agent, the hospitals would lease materials from the University, which would handle all arrangements and receive approximately 40% of the resulting revenue for their efforts.

By adopting an agent fee of 40%, UMA is accepting a standard common in the publishing industry, and would permit all sales

to be made on a flat-fee basis, further reducing UMA's administrative overhead. UMA members would have the benefit of course revenues, and the reduced (60%) cost for their own use of UMA materials.

UMA cannot be judged according to its original goals; it would have been quite a task for any group. However, what UMA has accomplished in seven years is successful growth from an in-state production and delivery system to a multi-state production consortium with a national reputation, and high quality post-secondary course materials. They have conducted pioneering research on the delivery of open learning systems, and are well on their way to economic self-sufficiency.

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